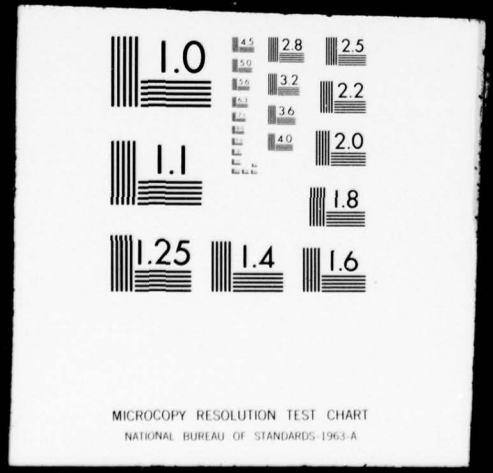
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REPORT NO. GDLST 711 & 712
DATE 29 August 1977
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GENERAL DYNAMICS
Convair Division

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REPORT GDLST 711 & 712

LOW SPEED WIND TUNNEL TESTS TO EVALUATE THE AERODYNAMIC AND THERMODYNAMIC CHARACTERISTICS OF VSTOL FOUNTAINS AND INLET REINGESTION

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Tested: 3 May 1977

Submitted Under: ONR Contract N00014-76-C-0698

PREPARED BY M. B. Eilert
M. B. Eilert
CHECKED BY J. H. Struthers
J. H. Struthers

APPROVED BY
APPROVED BY
S. A. Griffin

CASD-GDLST-711,
CASD-GDLST-712

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REVISIONS

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
MODEL AND METHODS	4
RESULTS	9
MODEL SKETCHES	11
MODEL PHOTOGRAPHS	19
DESCRIPTION OF MODEL COMPONENTS	36
NOMENCLATURE	37
RUN INDEX, FOUNTAIN STUDY	46
DATA PLOTS, FOUNTAIN STUDY	47
RUN INDEX, REINGESTION STUDY	233
DATA PLOTS, REINGESTION STUDY	238
REPORT DISTRIBUTION	362

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INTRODUCTION

This report presents data from Low Speed Wind Tunnel tests to evaluate the aerodynamic and thermodynamic characteristics of VSTOL fountains and inlet reingestion. The tests were run in the 16- by 20-foot test section of the General Dynamics Low Speed Wind Tunnel during the period from 3 May through 18 May 1977. A total of 147.0 wind tunnel test hours was used. The tests were authorized under ONR Contract N00014-76-C-0698. Messrs. A. Karemaa and H. A. Weber represented the Convair technical group. Messrs. C. W. Smith and J. Garner represented the Fort Worth Division.

The purpose of the test program was twofold; namely, (1) to obtain test data on fountain type flow fields that exist below hovering lift-jet type VTOL airplanes, and (2) to obtain test data on the hot-gas reingestion into the engine inlets for this type of aircraft. Measurements of dynamic pressure, flow angularity, and temperature distribution were measured in (1) the fountains produced by one, two, three, and four vertical jets, and (2) the reingestion flow field produced by a three vertical jet configuration. In addition, model interference forces and moments were measured for all vertical jet configurations.

Heated high pressure air was supplied to the model through a specially constructed hydrogen burner system. Fountain and

INTRODUCTION (Continued)

reingestion flow characteristics were measured by means of a traversing cone-probe pressure and temperature rake. Model interference forces and moments were measured by a six-component internal strain gage balance. Duct inlet flow temperatures were measured by permanently installed thermocouples.

Fountain characteristics were measured in Test GDLST 711, in which the model was tested at wind speeds of 0, 3, and 30 knots. Although the major portion of this test was performed at an angle of attack of zero degrees, a limited number of runs were made at 10 degree angle of attack with a two-nozzle configuration only. Reingestion characteristics were measured in Test GDLST 712, in which the model was tested at wind speeds of 0, 3, and 20 knots. The angle of attack was zero for this entire test.

Nozzle pressure ratio, jet temperature, and inlet weight flow were held constant for all runs. The nozzle pressure ratio was set to an approximate value of 2.0. A jet temperature of about 400°F was used for the major portion of the test. A few selected runs were made at jet temperatures of 200°F and room temperature.

For these tests, the ordinarily closed-circuit wind tunnel was vented to reduce the heat buildup rate. For the zero forward velocity case, the tunnel return circuit was completely blocked. The main fan was used to maintain a 3-knot velocity of fresh air to purge the test section. When significant forward velocities

INTRODUCTION (Continued)

were used (20 and 30 knots), the return circuit blockage was removed and the amount of tunnel venting was reduced consistent with the forward velocity requirement.

MODEL AND METHODS

The modular type model used in these tests was nominally a 1/15 scale model designed to represent a variety of fighter-type VTOL aircraft. Composed of two general aerodynamic configurations, the model could simulate several propulsion arrangements with a fuselage, swept wing, and horizontal stabilizer, and various propulsion arrangements with a fuselage, delta wing, and canard configuration. For these tests, the major portion of the fuselage and wings were removed from the model substructure and various flat plates were inserted. The family of circular, rectangular, and triangular plates shown in the sketches on pages 15 and 16 , were mounted on the model through a six-component internal balance so that the propulsion system or nozzle induced forces on the plates could be read directly. In certain configurations, segments of these plates were mounted directly to the non-metric model plenum structure. All other model components, including the fuselage and nozzles, were mounted directly to the non-metric model plenum structure so that only the plate forces and moments were measured by the balance. All of the basic plates were constructed of .375-inch thick aluminum and had sharp 90 degree edges.

The model substructure was constructed mainly of steel and consisted of two high pressure plenums, an internal balance, a balance cooling jacket, and the non-metric support brackets for

MODEL AND METHODS (Continued)

the fuselage, duct inlets, and non-metric plate segments. The plenums were machined from a single piece of steel with the bottom surface welded into place. Three sides of each plenum contain two-inch diameter holes to allow for installation of the various nozzles as shown in the nozzle location matrix sketch on page 14. Cover plates were provided for the unused positions.

The model was mounted in an upright position in the 16- by 20-foot test section on its own special sting. The test section ground board was in the extended position for the entire test. Pitch angle and ground height variations were obtained through the normal translating tunnel support system. Yaw angle was obtained by manually setting the yaw pivot in the special sting assembly. Heated high pressure air was supplied to model plenums through two 1.0-inch diameter steel lines leading along the sting blade. A specially-constructed hydrogen burner system, located outside of the wind tunnel shell, was used to heat the 600 PSI air delivered from the normal Gardner-Denver auxiliary air system. The air was distributed to each of the two model plenums through individual motor-driven control valves located on the floor of the test section beneath the ground board. Suction for the duct inlets was provided by two 3.25-inch diameter compressed air ejectors mounted on the sting support above the model. Flexible plastic tubing was used to connect the ejectors to the steel duct inlets.

The wing plates were mounted on the C-5-.75F six-component internal strain gage balance. Each of the model blowing plenums

MODEL AND METHODS (Continued)

was instrumented with a static pressure pickup. These plenum pressures were measured with individual 500 PSI pressure transducers located in the model. Blowing plenum temperatures were measured with individual chromel-alumel thermocouples. Inlet ejector drive pressures were measured with individual 150 PSI pressure transducers. Each of the duct inlets was instrumented with a single internal static pressure pickup connected to individual 5 PSID transducers, and four internal copper-constantain thermocouples electrically coupled to a single readout. In addition, each of the duct inlets was instrumented with three external thermocouples standing 1.0 inch off the outer surface on 45° spacings from the horizontal centerline of the duct.

Nozzle thrust was determined for each test data point using the plenum pressure and temperature versus thrust relationships obtained in pretest calibrations of each of the nozzle configurations. Inlet weight flow was determined for each data point using the ejector drive pressure and inlet temperature versus weight flow relationships obtained in pretest calibrations of the ejector and inlet assemblies. Both the nozzle and inlet calibration results are given in the pretest report TR-76-VSTOL-01.

The airflow survey rake, shown in the sketch on page 18, was used to measure the temperature and pressure in both the fountain and reingestion flow fields. The rake was equipped with 14 cone-type pressure probes and 13 chromel-alumel thermocouples all on .50-inch spacings. The pressure probes and

MODEL AND METHODS (Continued)

thermocouples were staggered .25 inches in the plane of operation in order to minimize aerodynamic interference. Each of the cone probes was equipped with one total pressure orifice and four directional orifices. The rake was mounted on a remote-controlled motor-driven traversing mechanism.

During the fountain flow surveys, the rake was oriented either horizontally with the probes pointed downward toward the ground board, or vertically with the probes parallel to the ground board and pointed inward toward the nozzle axis. During the reingestion flow surveys, the rake was oriented vertically in front of the model with the probes pointed upstream. Probe pressures were recorded through five scanivalves equipped with 10 PSID pressure transducers for the fountain surveys, and 2.5 PSID pressure transducers for the reingestion surveys.

In order to limit the heat buildup in the normal closed circuit low speed wind tunnel, it was necessary to provide large quantities of fresh air exchange. For the zero velocity case, the normal return circuit was completely blocked off at the entrance to the 8- by 12-foot test section, the main motor hatch in the return circuit was removed, the ceiling hatch in the 8- by 12-foot test section was opened, and the main fan was used to maintain a 3-knot velocity over the model to purge the 16- by 20-foot test section. For the 20-knot velocity case, the main motor hatch in the return circuit was opened 6 inches and the ceiling hatch in the 8- by 12-foot test section was opened.

MODEL AND METHODS (Continued)

For the 30 knot velocity case, a 2- by 3-foot access hatch in the return circuit was removed and the west door to the 8- by 12-foot test section was opened.

Six-component balance data, plenum pressures and temperatures, and inlet pressures and temperatures were recorded during all force runs. Model power settings and attitude were held constant, while ground height was varied. For airflow survey runs, only the take location was varied. During the reingestion portion of the test, a limited number of tuft survey runs were made in which visual observations were made of the flow directions as indicated by yarn tufts attached to the end of a hand-held pole.

All recorded data were reduced to coefficient form according to the equations specified in pretest report TR-76-VSTOL-01. All force and moment data were referred to stability axes. For the zero velocity case, the force data represents the total induced interference coefficients. For the forward velocity case, the power-off forces and moments were subtracted from the power-on data to produce only the propulsion interference terms.

RESULTS

Plotted data showing fountain characteristics from Test GDLST 711 are presented in run number order on pages 47 through 232 . The run index for these data is given on pages 46.1 through 46.5 . Plotted data showing reingestion characteristics from Test GDLST 712 are presented in run number order on pages 238 through 361 . The run index for these data is given on pages 233 through 237 . The tabulated data are not presented in this report, but are on file at the General Dynamics Low Speed Wind Tunnel.

Lift coefficients were based on the jet thrust. Pitching moment coefficients were based on the jet thrust and plate chord. Rolling moment coefficients were based on the jet thrust and plate span. All force and moment coefficients were referred to stability axes through a moment reference point located longitudinally at the centroid of the nozzle configuration, laterally on the model plane of symmetry and vertically on the waterline plane of the nozzle exits. The reference dimensions for data reduction, as well as the location of the moment reference point for all plate configurations, are given in the tables on page 17.

Airflow characteristics in both the fountain flow field and the reingestion flow field are presented as a function of probe location, non-dimensionalized in reference to the nozzle diameter. For the fountain surveys, the zero directional origin was located at: the centroid of the nozzle configuration for

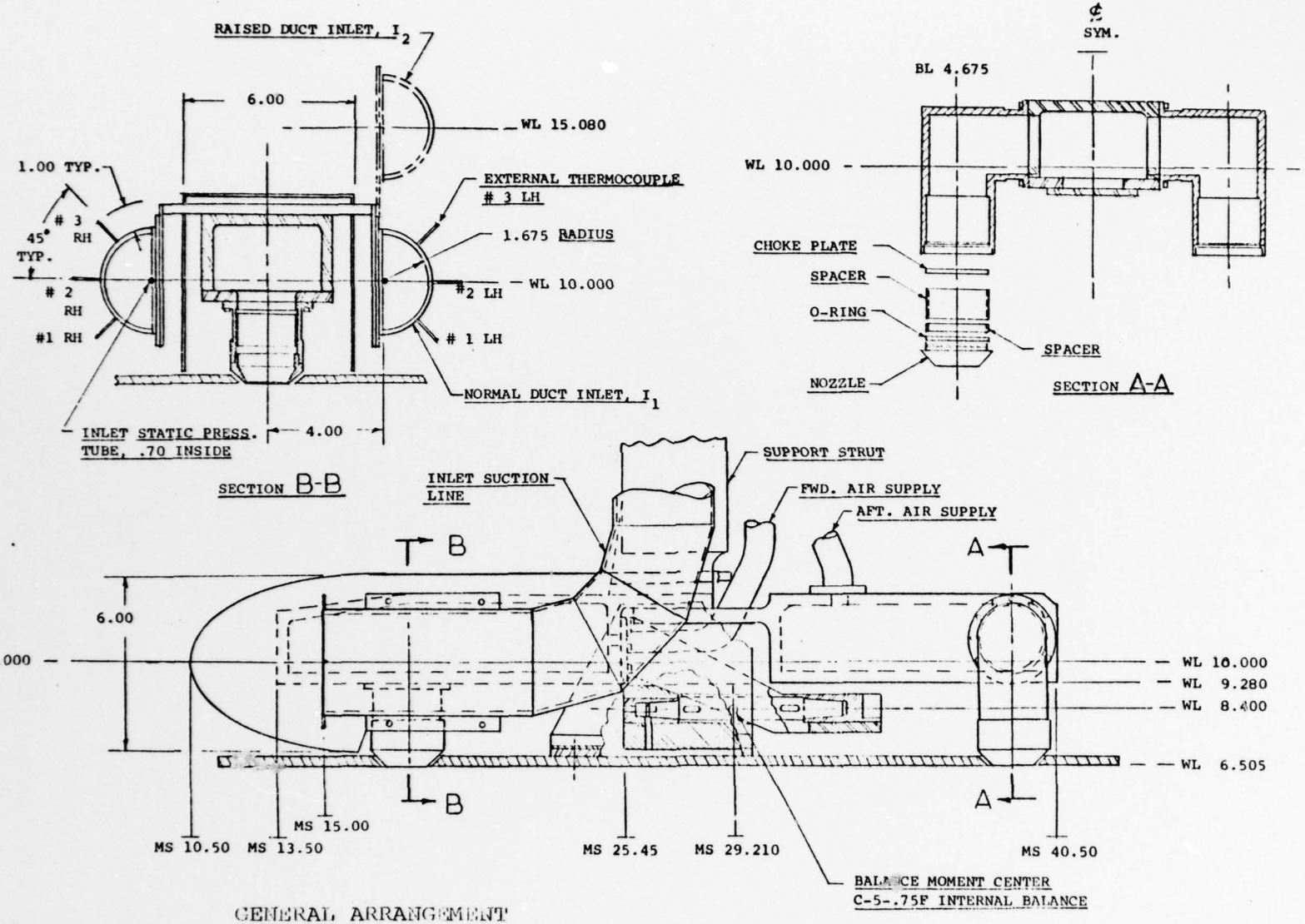
RESULTS (Continued)

the "X" and "Y" directions, and the ground board surface for the "Z" direction. For the reingestion surveys, the zero directional origin was located at: the fuselage nose (model station 10.5) for the "X" direction, the model centerline of symmetry for the "Y" direction, and the ground board surface for the "Z" direction.

The C-5-.75F internal balance used in this test received a complete calibration in April 1973, and a check calibration before acquiring the test data. All pressure transducers were calibrated on installation in the tunnel. All calibrations were performed using tertiary standards calibrated and certified by Convair Electro Physical Standards Laboratory. The airflow survey rake used in this test was calibrated in the 8- by 12-foot test section of the Low Speed Wind Tunnel on 13 May 1977. In that calibration test, it was found that the rake was capable of measuring flow angularity up to 42 degrees. Directional pressure measurements from this test which would have exceeded 42 degrees were considered invalid and are not presented in either the plotted data of this report or in the tabulated data.

INDEX OF MODEL SKETCHES

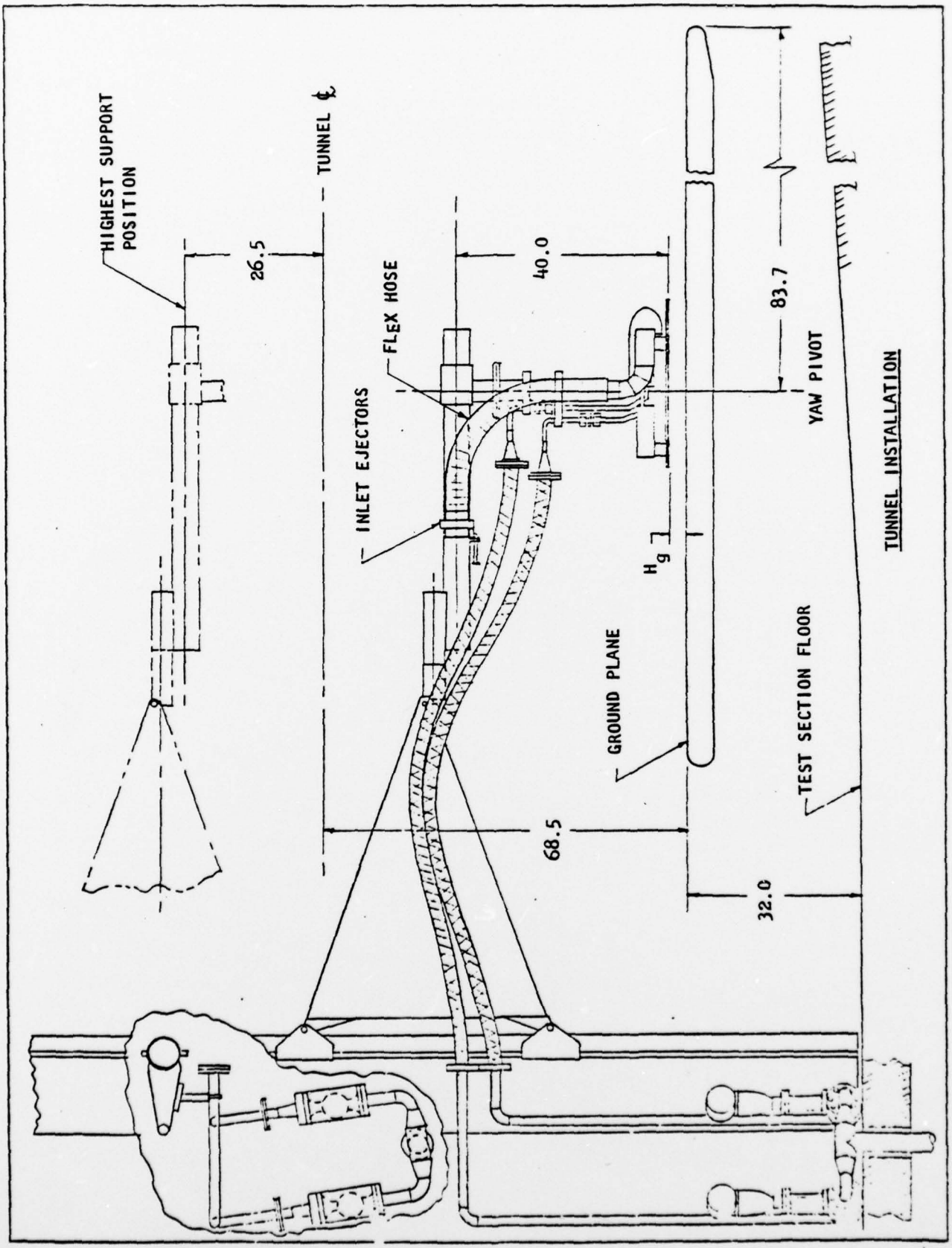
	Page
GENERAL ARRANGEMENT	12
TUNNEL INSTALLATION	13
NOZZLE LOCATION MATRIX	14
WING PLATES	15
MOMENT REFERENCE DIAGRAM	17
AIRFLOW SURVEY RAKE	18

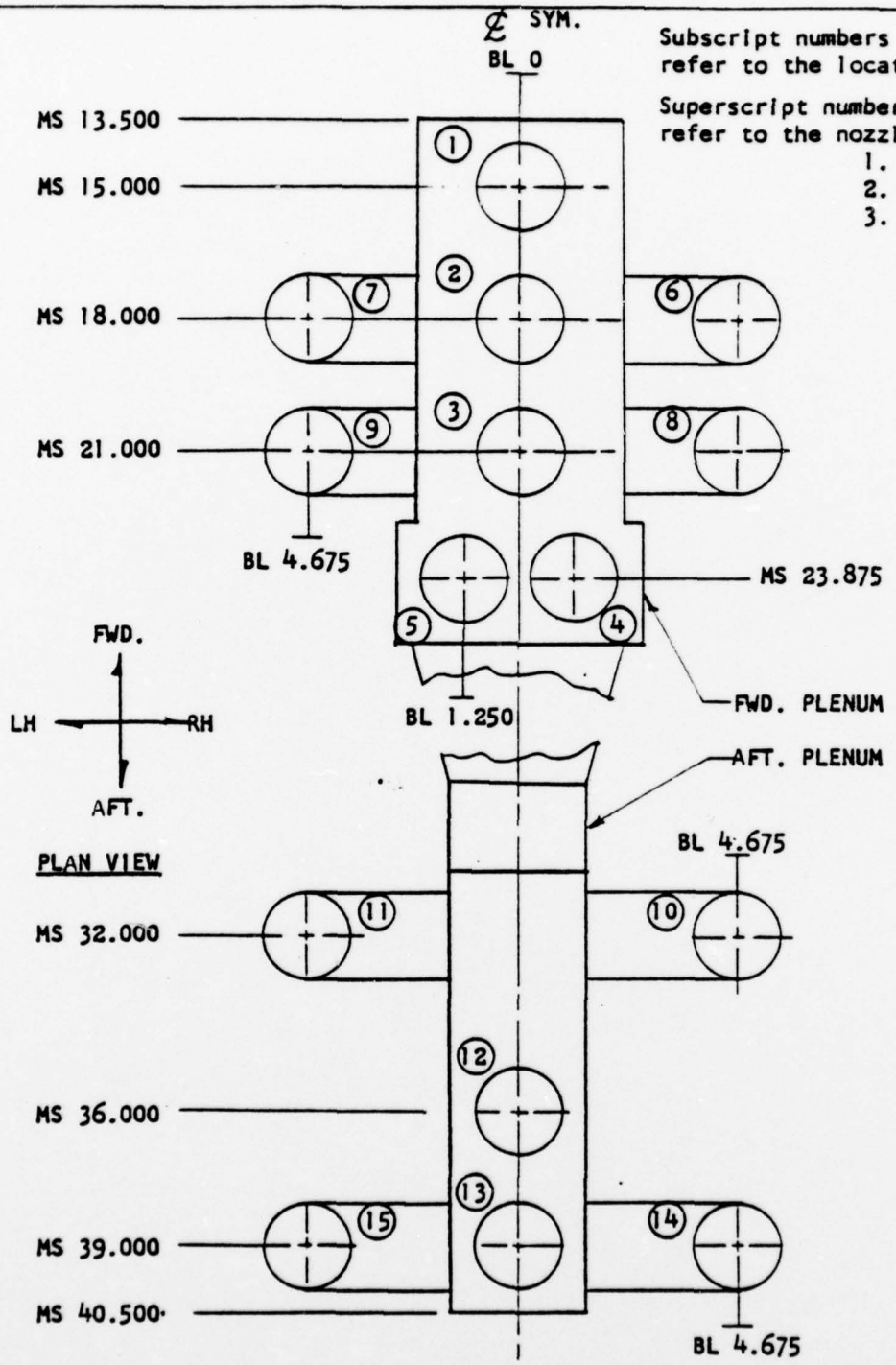


GENERAL ARRANGEMENT

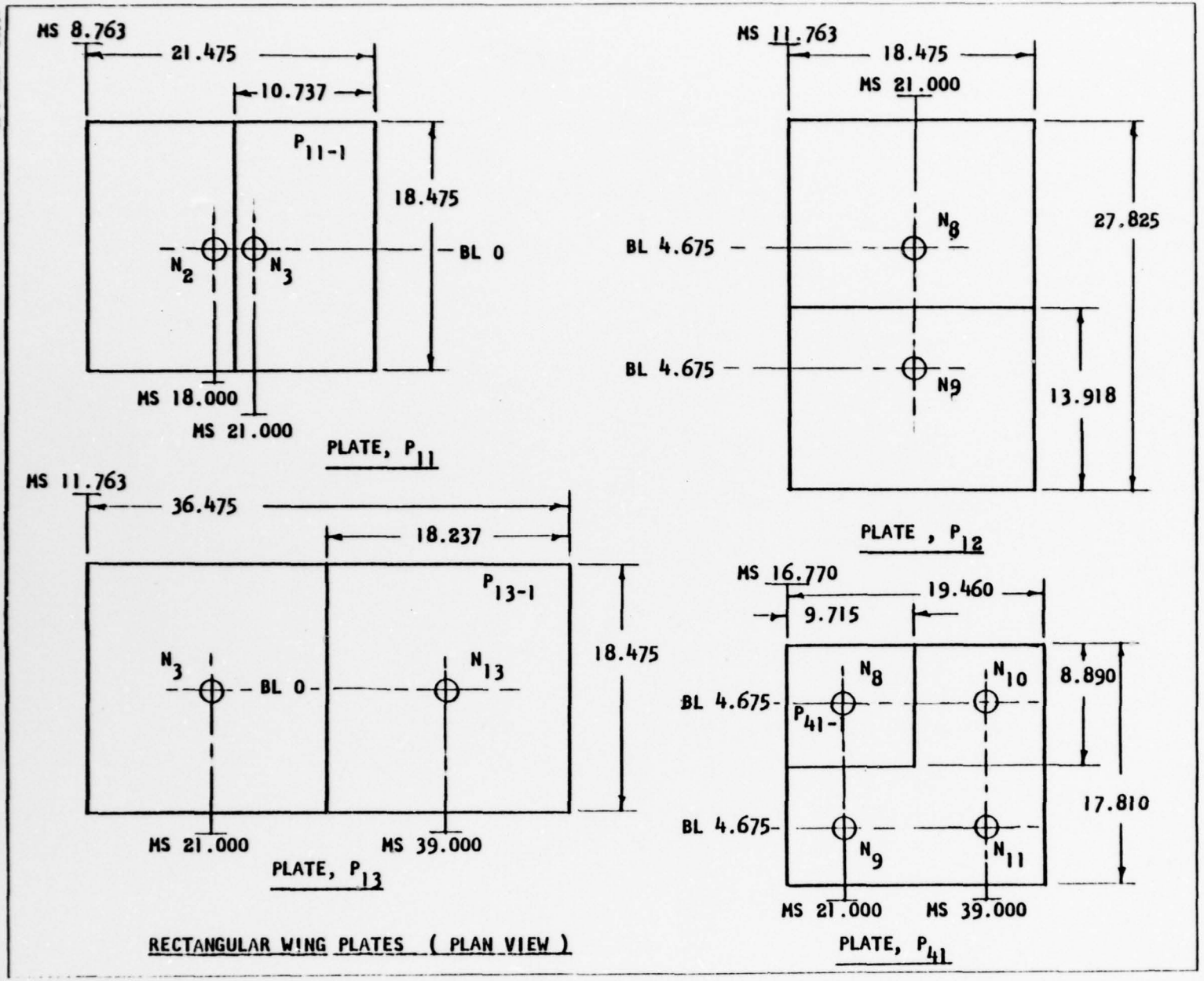
V/STOL RESEARCH MODEL

REF: WT-72-109309

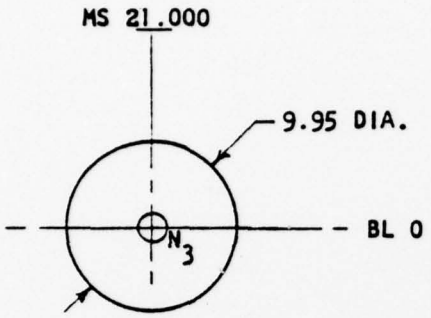

HIGHEST SUPPORT POSITION
26.5
TUNNEL ℄
FLEX HOSE
40.0
83.7
YAW PIVOT
INLET EJECTORS
H_g
TUNNEL INSTALLATION
GROUND PLANE
TEST SECTION FLOOR
68.5
32.0



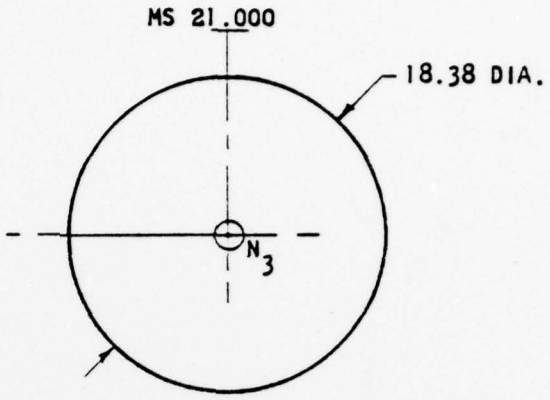
NOZZLE LOCATION MATRIX



RECTANGULAR WING PLATES (PLAN VIEW)

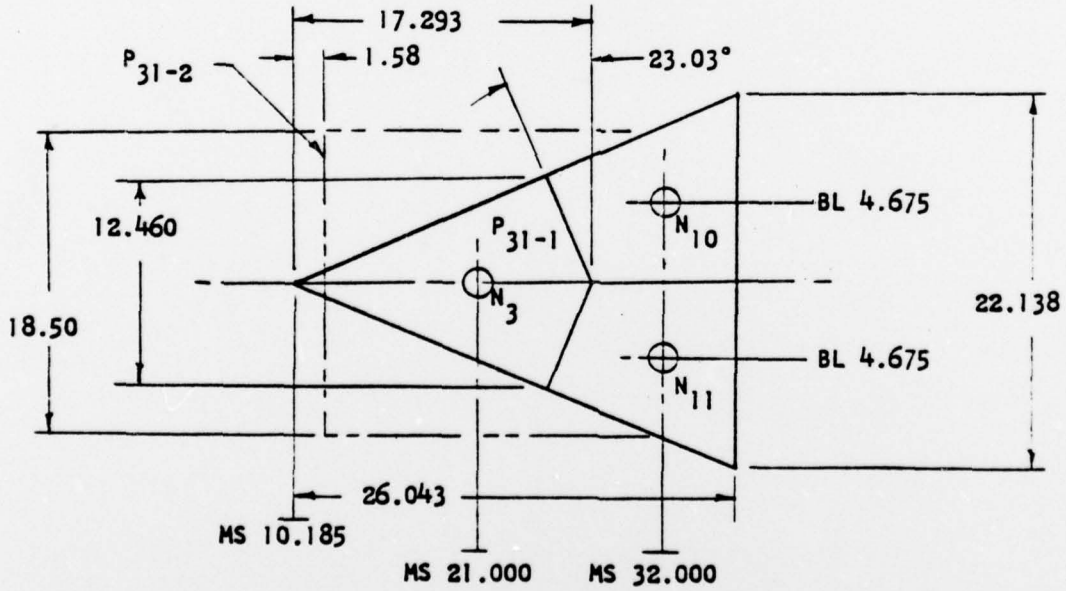


PLATE, P_1



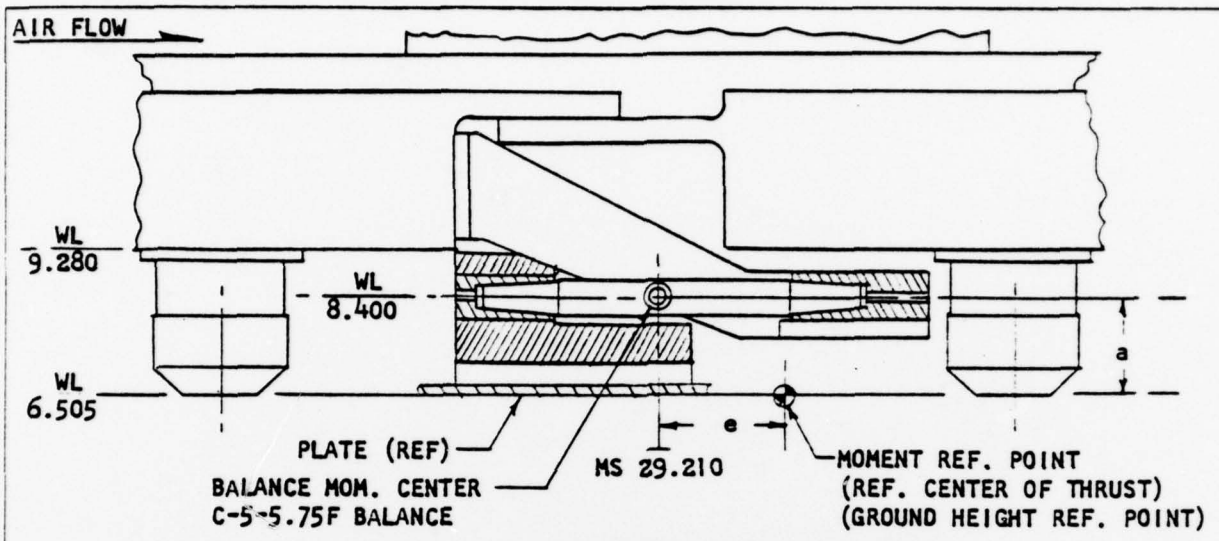
PLATE, P_4

Note: All plates are .375-inches thick, except P_{31-2} which is .125-inches thick.



PLATE, P_{31}

CIRCULAR AND TRIANGULAR WING PLATES (PLAN VIEW)



MOMENT REFERENCE DIAGRAM

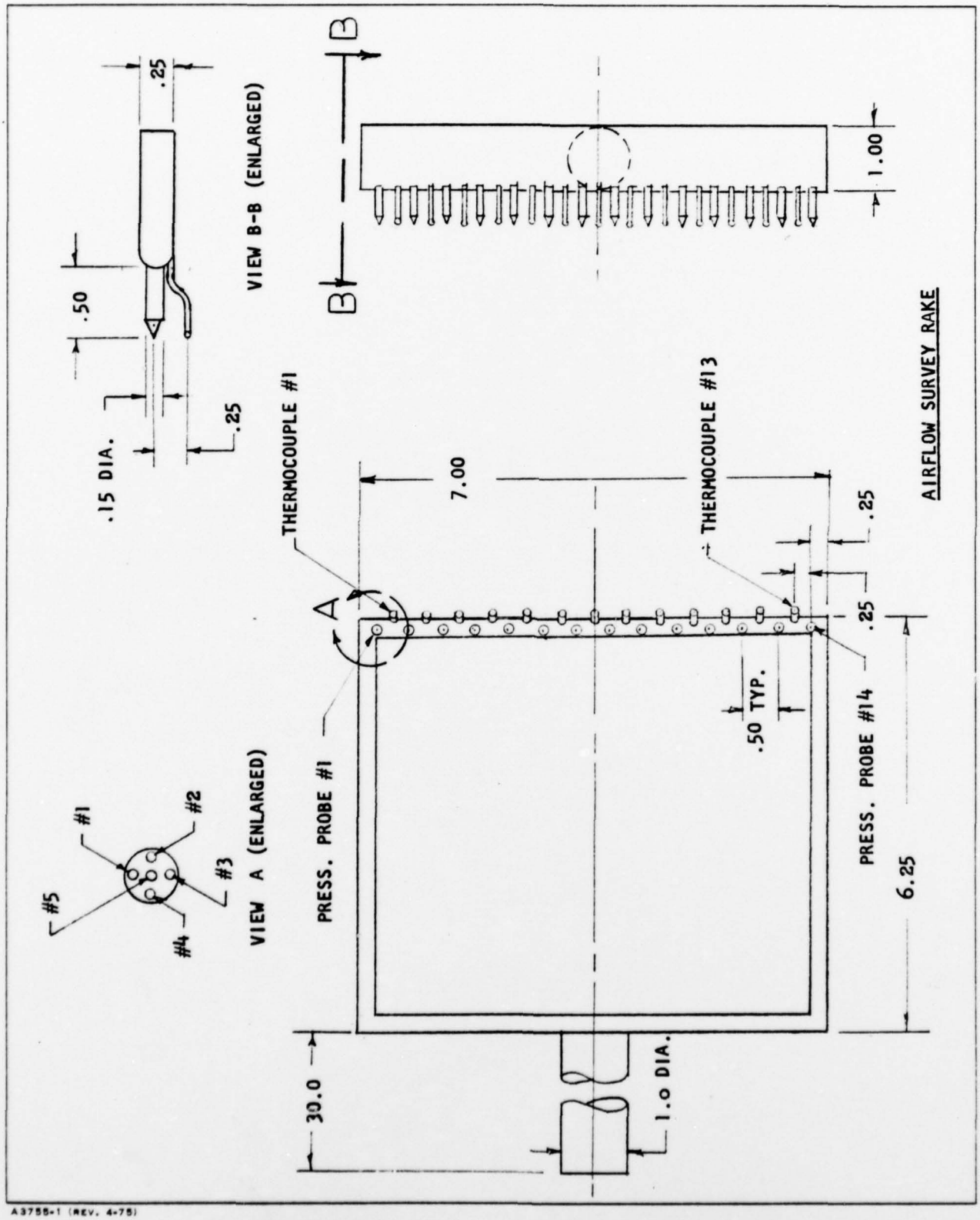
MOMENT TRANSFER DIMENSIONS

NOZZLE CONFIGURATION	REF. CENTER OF THRUST		TRANSFER DISTANCE	
	MS	WL	e''	a''
N_2N_3	19.500	6.505	-9.710	1.895
$N_3N_{10}N_{11}$	28.333	"	- .880	"
N_3N_{13}	30.000	"	.790	"
N_3	21.000	"	-8.210	"
N_8	"	"	"	"
N_8N_9	"	"	"	"
N_9	"	"	"	"
N_{13}	39.000	"	9.790	"
$N_8N_9N_{10}N_{11}$	26.500	"	-2.710	"

DATA REFERENCE DIMENSIONS

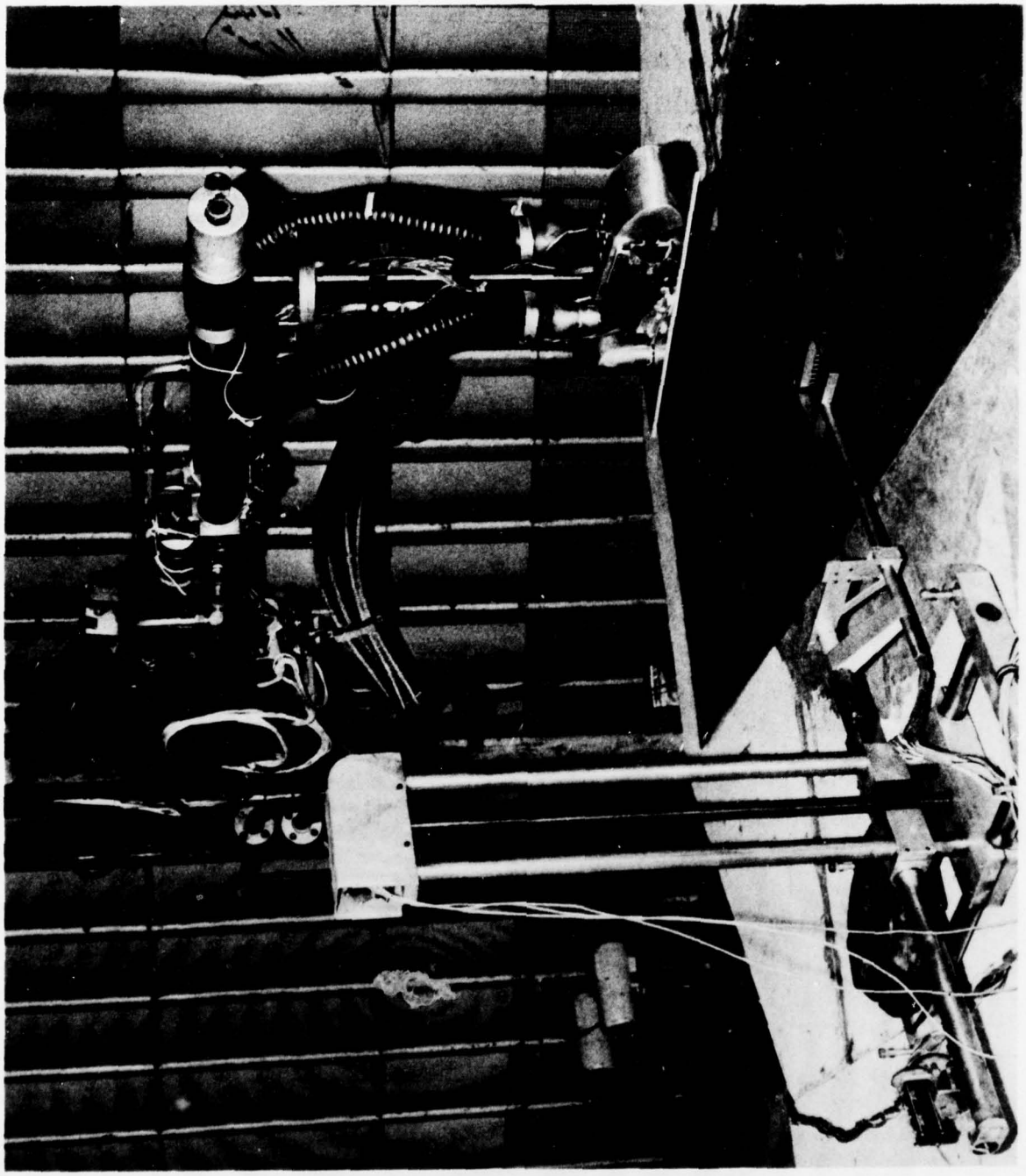
CONFIG.	c''	b''
P_1	9.950	9.950
P_4	18.380	18.380
P_{11}	21.475	18.475
P_{11-1}	10.737	"
P_{12}	27.825	"
P_{12-1}	13.912	"

CONFIG.	c''	b''
P_{13}	36.475	18.475
P_{13-1}	18.237	"
P_{31}	26.043	22.138
P_{31-1}	17.293	12.460
P_{41}	19.460	17.810
P_{41-1}	9.715	8.890

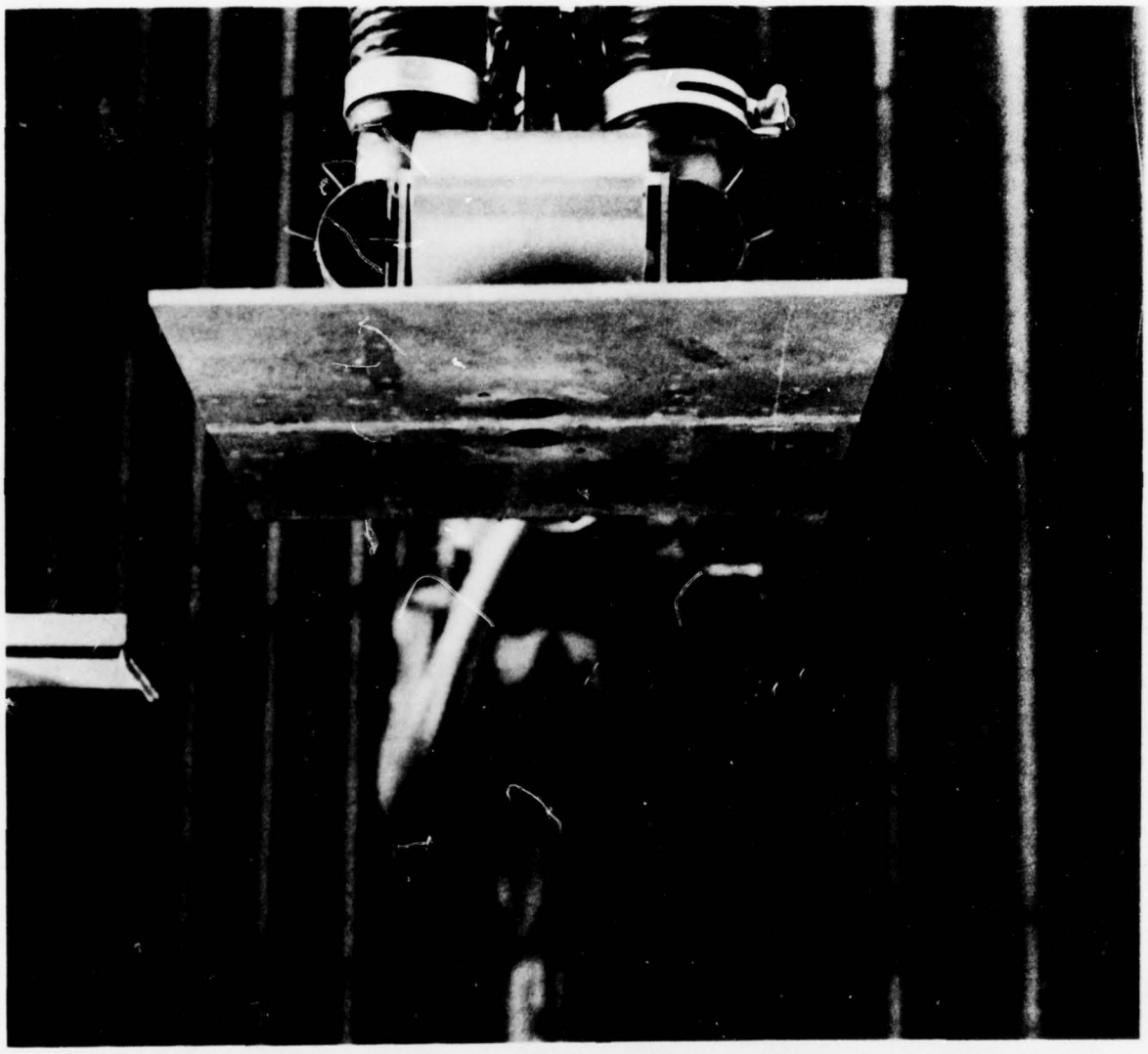

AIRFLOW SURVEY RAKE
THERMOCOUPLE #1
THERMOCOUPLE #13
PRESS. PROBE #1
PRESS. PROBE #14
7.00
6.25
30.0
1.0 DIA.
.50 TYP.
.25
1.00
.50
.15 DIA.
VIEW B-B (ENLARGED)
VIEW A (ENLARGED)
#1
#2
#3
#4
#5

INDEX OF MODEL PHOTOGRAPHS

Title	Page
MODEL AND SURVEY RAKE INSTALLATION	20
NOZZLE N_2N_3, PLATE P_{11}	21
NOZZLE $N_3N_{10}N_{11}$, PLATE P_{31}	22
NOZZLE $N_3N_{10}N_{11}$, PLATE P_{31-2}	23
NOZZLE N_3N_{13}, PLATE P_{13}	24
NOZZLE N_3, PLATE P_1	25
NOZZLE N_3, PLATE P_4	26
NOZZLE N_8, PLATE P_{12-1}	28
NOZZLE N_8N_9, PLATE P_{12}	29
NOZZLE N_{13}, PLATE P_{13-1}	30
NOZZLE $N_8N_9N_{10}N_{11}$, PLATE P_{41}	31
MODEL COMPONENT DETAILS.	32
SURVEY RAKE DETAIL	35

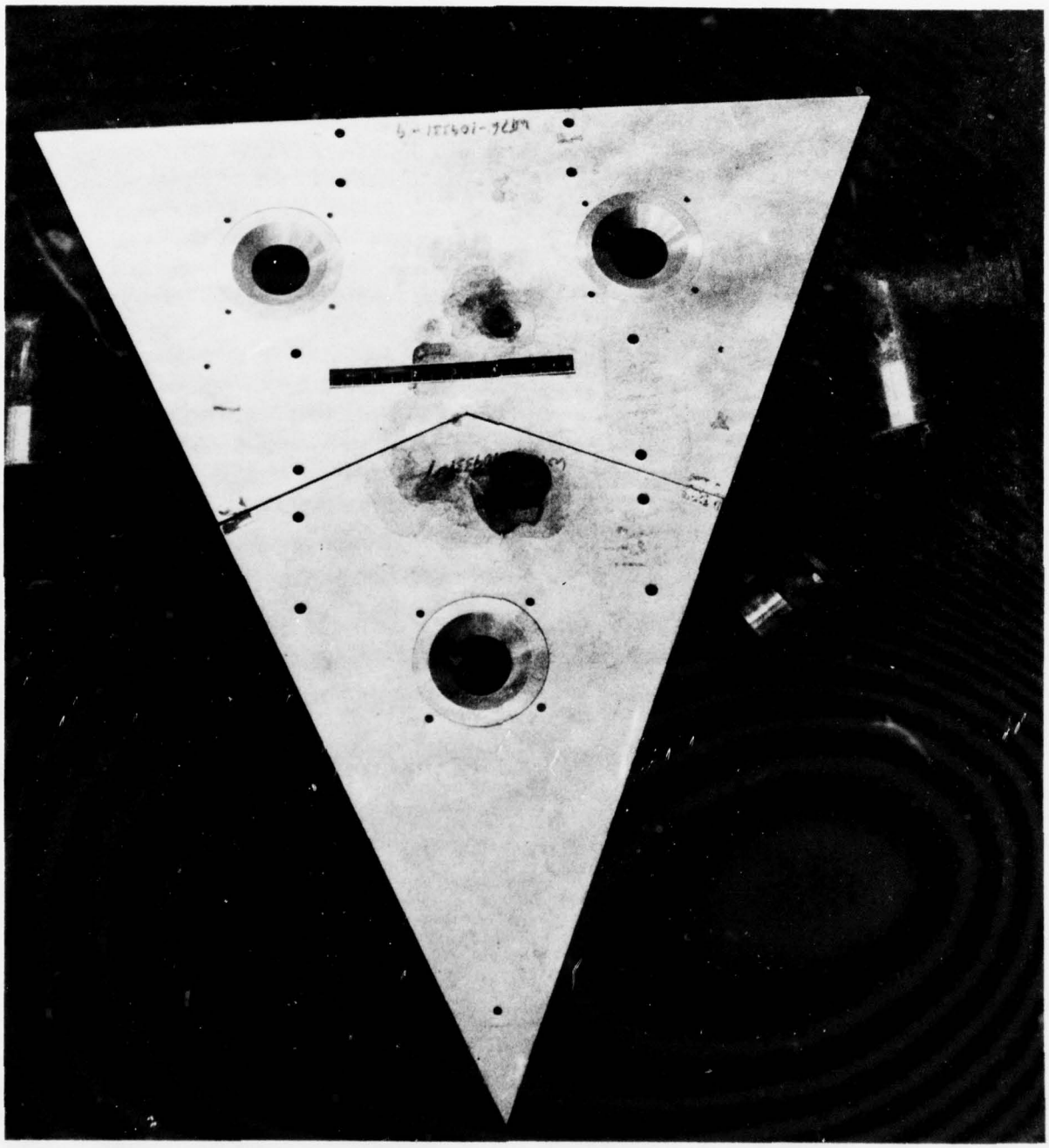


MODEL AND SURVEY RAKE INSTALLATION



NOZZLE N_2N_3 , PLATE P_{11}

RUN 21

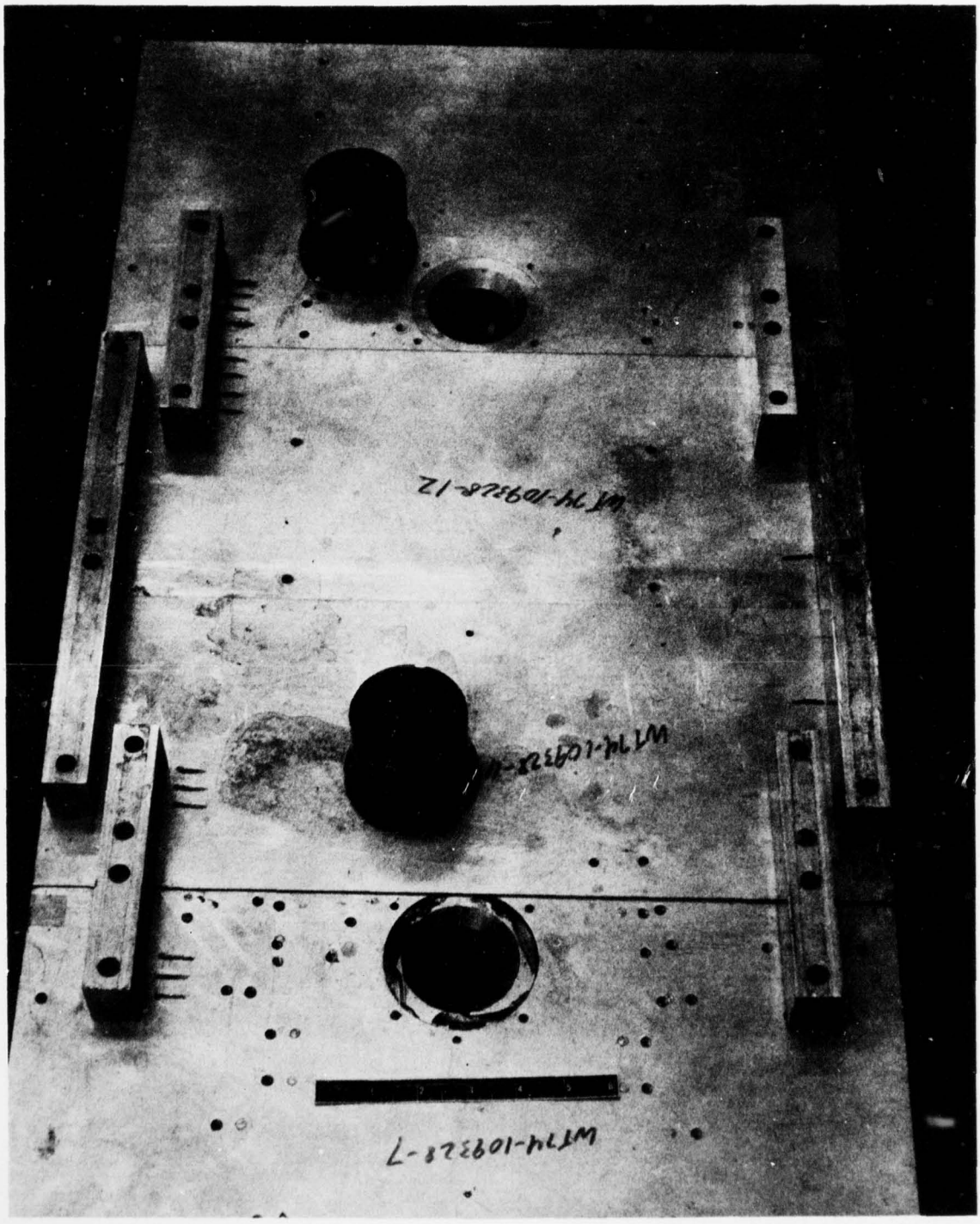


NOZZLE $N_3 N_{10} N_{11}$, PLATE P_{31}

RUN 32

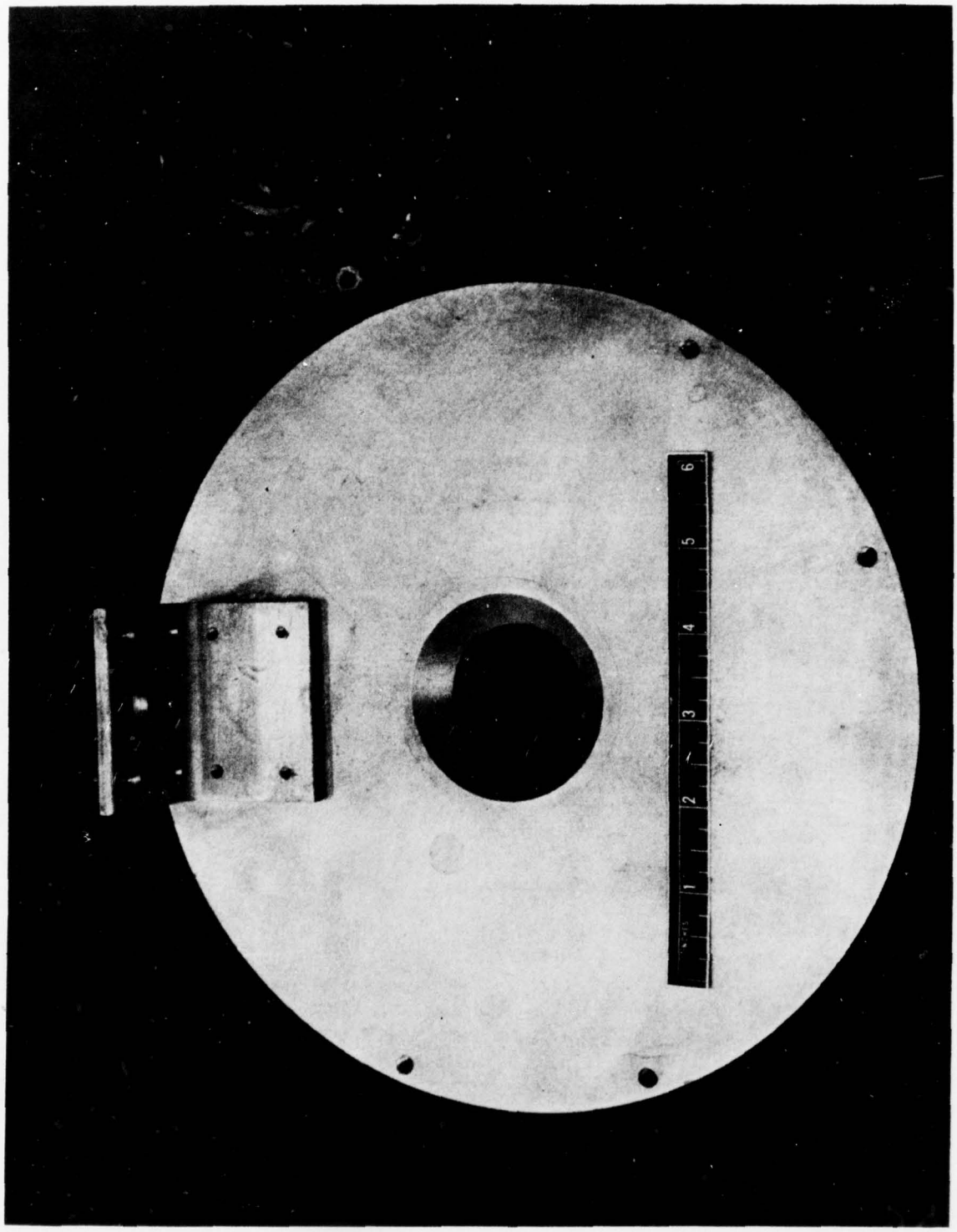


NOZZLE $N_3 N_{10} N_{11}$, PLATE P_{31-2}

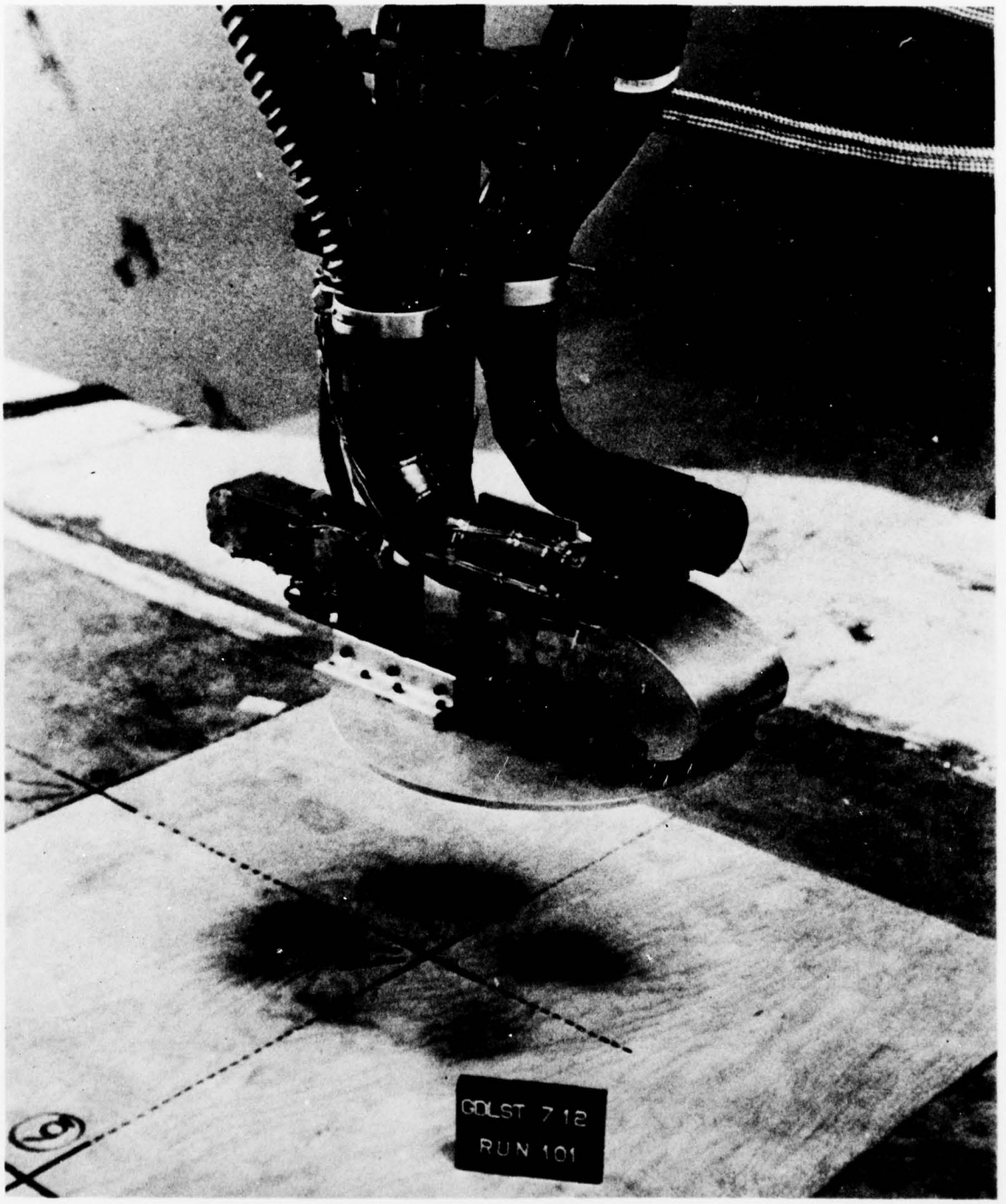


NOZZLE N_3N_{13} , PLATE P_{13}

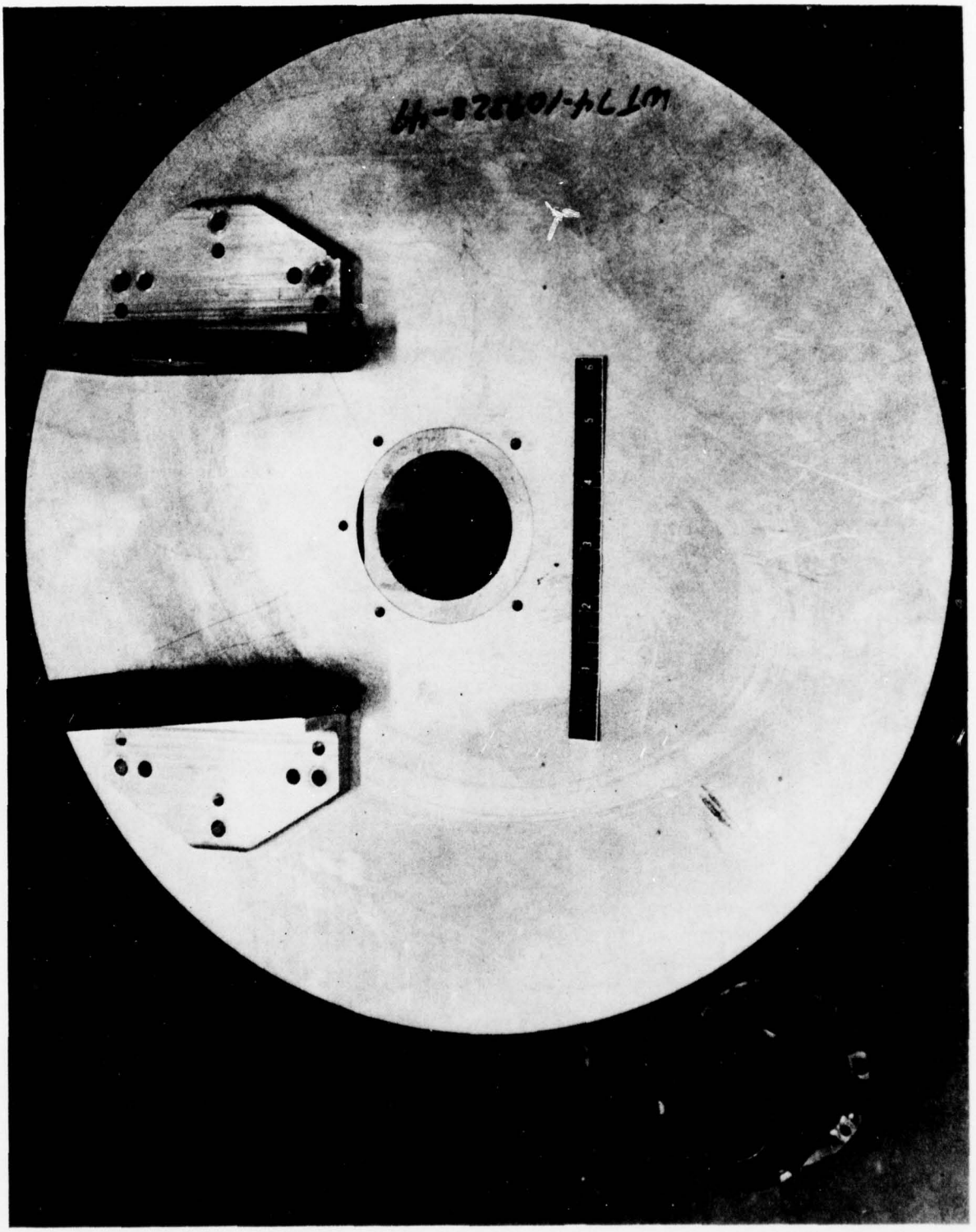
RUN 2



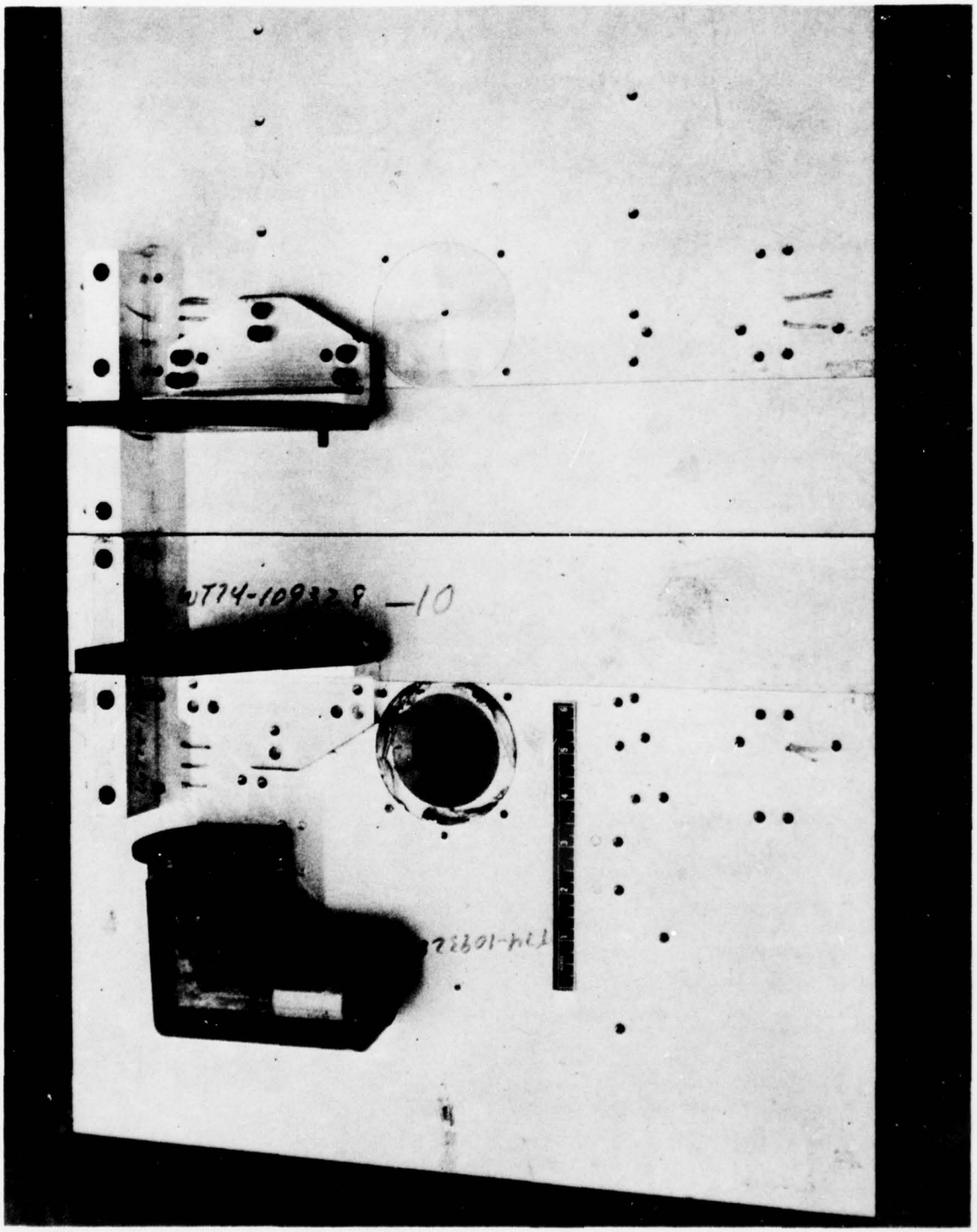
NOZZLE N_3, PLATE P_1
RUN 103



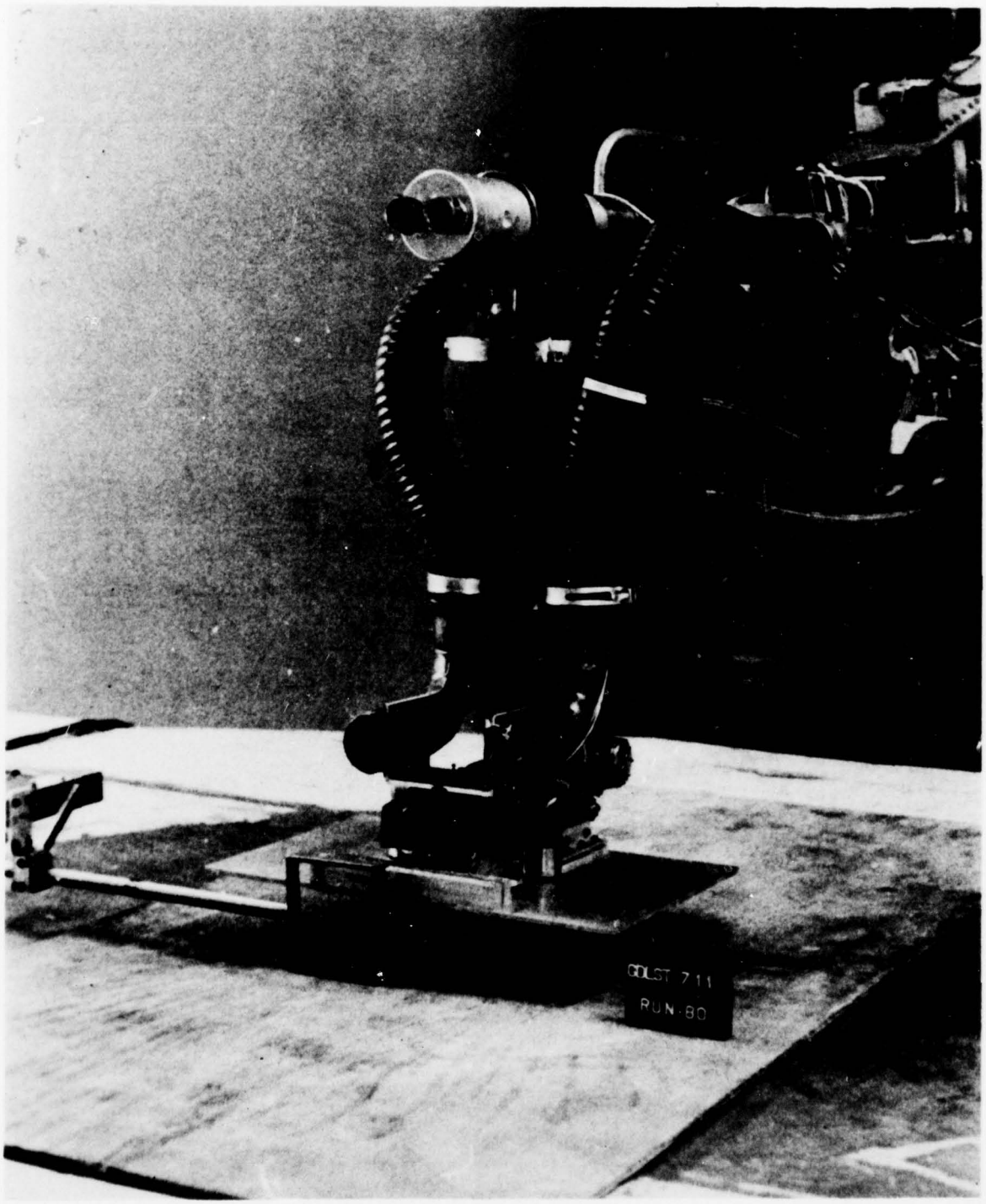
NOZZLE N_3 , PLATE P_4



NOZZLE N_3, PLATE P_4 -RUN 101

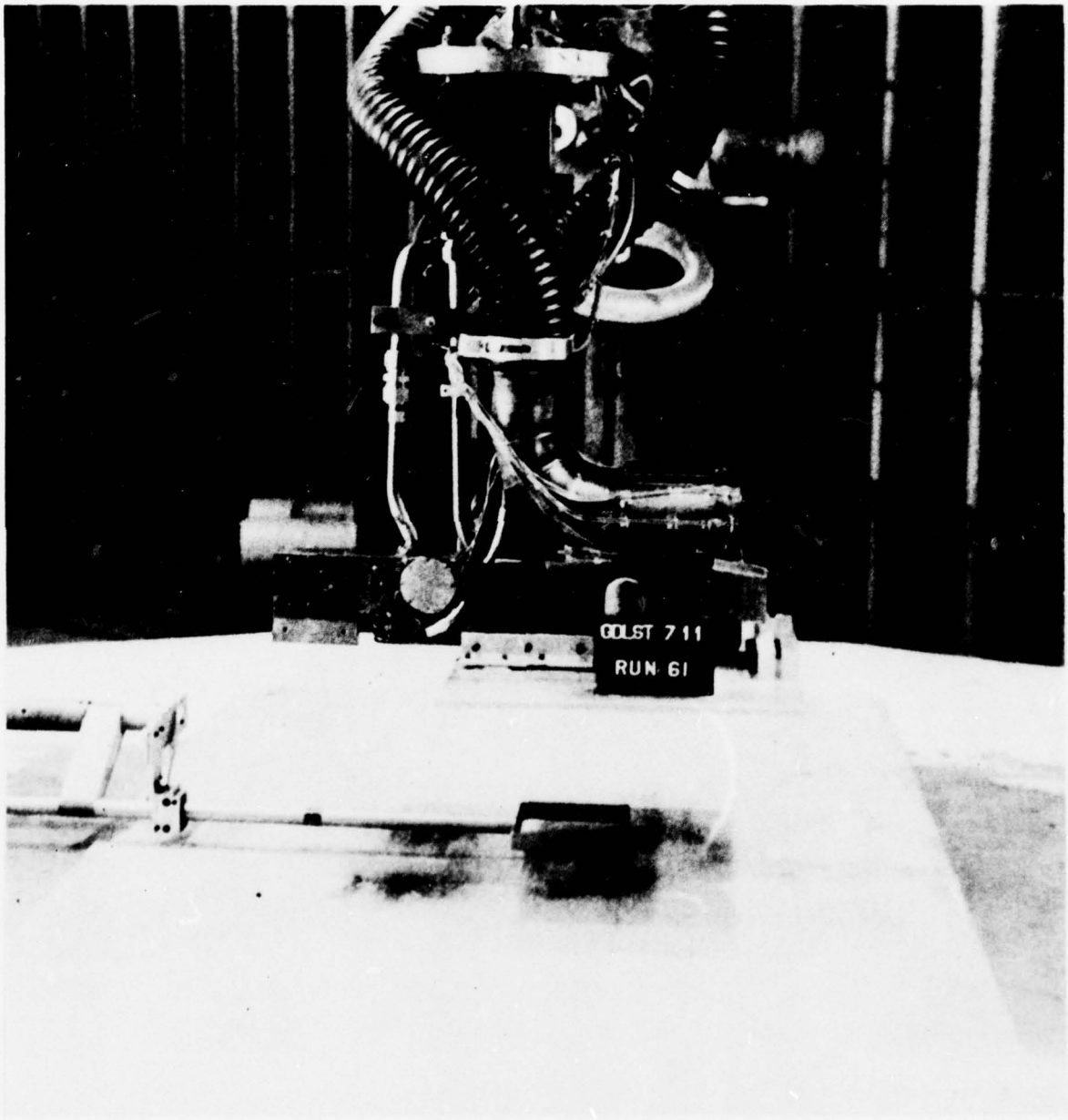


NOZZLE N_8, PLATE P_{12-1} RUN 57



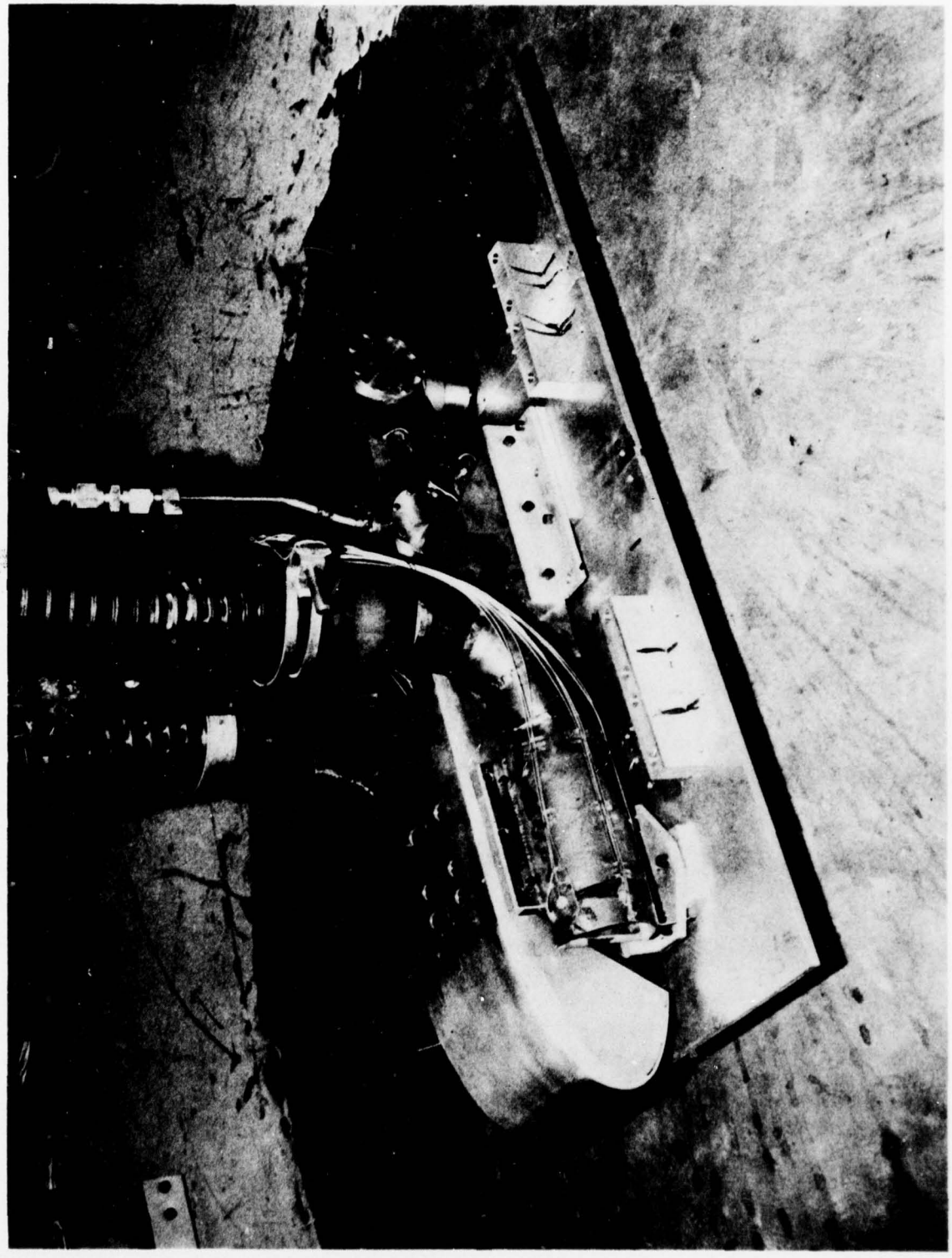
NOZZLE N_8N_9 , PLATE P_{12}

YAW ANGLE = 0°

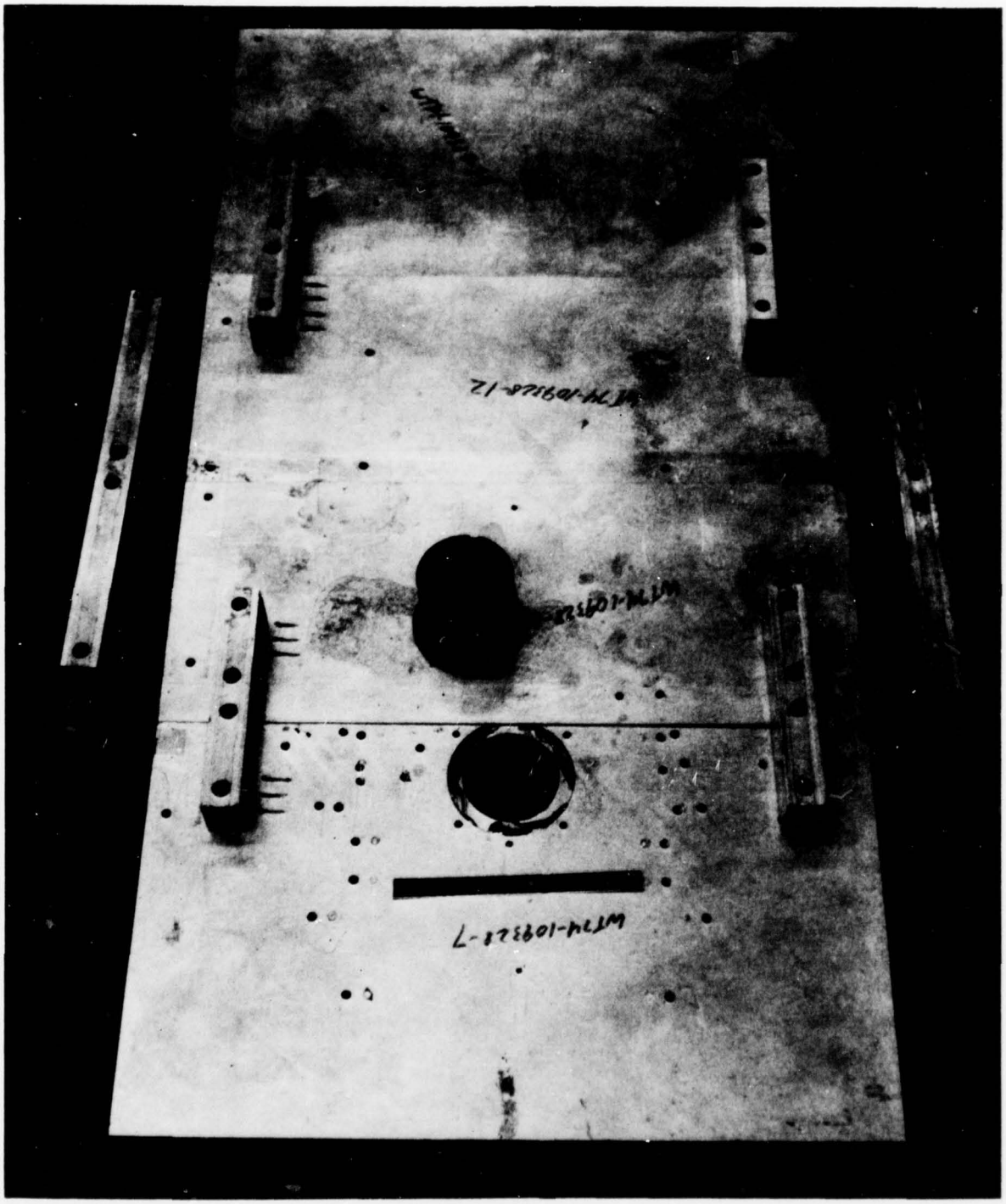


NOZZLE N_8N_9, PLATE P_{12}

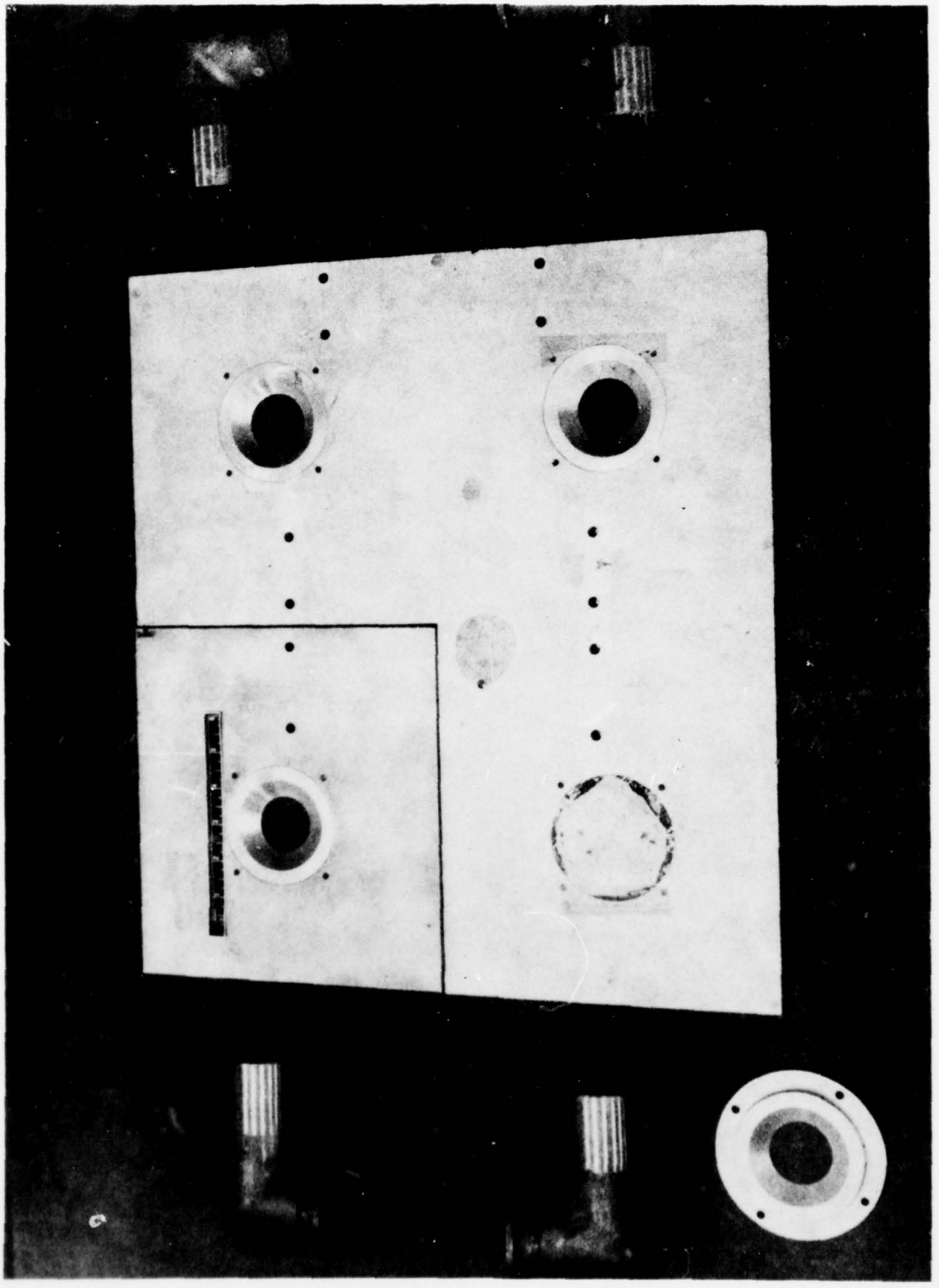
YAW ANGLE=-90°



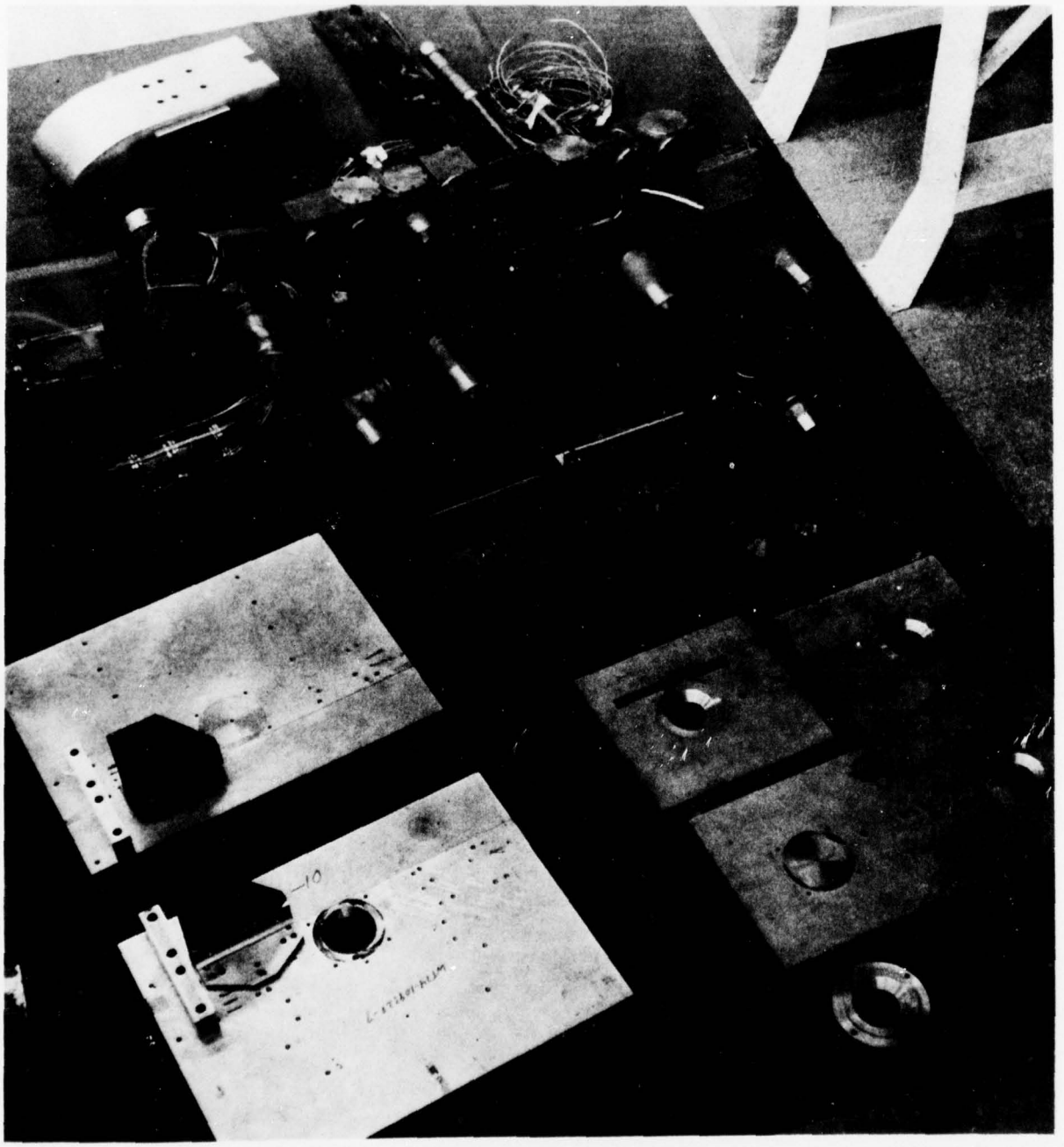
NOZZLE N_{13} , PLATE P_{13-1}



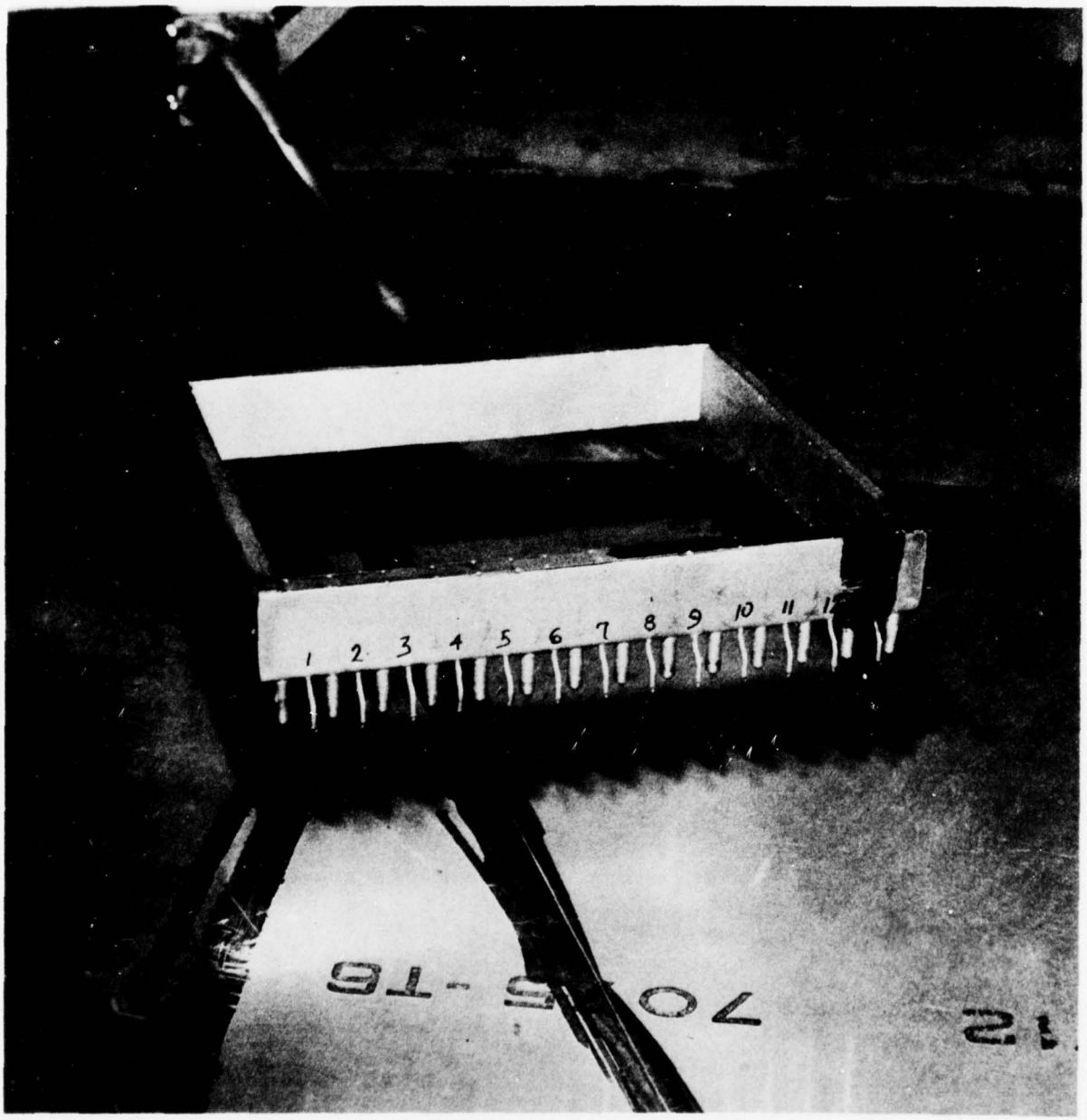
NOZZLE N_{13}, PLATE P_{13-1}



NOZZLE $N_8N_9N_{10}N_{11}$, PLATE P41
RUN 48



MODEL COMPONENT DETAILS



SURVEY RAKE DETAIL

DESCRIPTION OF MODEL COMPONENTS

Symbol	Description
F_1	Fuselage; simulated forward fuselage with the circular nose located at model station 10.50. This fuselage extended over the forward portion of the blowing plenum only, and was trimmed as necessary to permit installation of the various exit nozzles. The fuselage was mounted on the non-metric plenum structure and did not contribute to the aerodynamic forces measured by the internal balance. Ref. Dwg. WT-72-109309.
I_1	Duct Inlets; twin semi-circular duct inlets mounted on each side of the fuselage with the horizontal duct centerline at model waterline 10.00. The 1.67-inch internal radius inlets were located longitudinally at model station 15.000, and laterally at model buttock line 4.05. Each duct inlet was instrumented with one (1) inlet static pressure tap, three (3) internal thermocouples electrically connected together, and three (3) external thermocouples. Inlet suction was provided by individual compressed air ejectors mounted on the support sting above the model. The ejectors were connected to the inlets with 3.39 internal diameter flexible tubing. Ref. Dwg. WT-77-109333.
I_2	Raised duct inlets; same as I_1, except that the horizontal duct centerline was raised to model waterline 15.08.
N	Duct Exit Nozzle configuration; 30° conical half angle exit nozzle with the plane of the exit at model waterline 6.505. Ref. Dwg. WT-72-109310.
	Subscripts 1 through 15 on the configuration symbol refer to the fifteen separate nozzle locations shown in the nozzle location matrix sketch on page 14.

DESCRIPTION OF MODEL COMPONENTS (Continued)

Symbol	Description
N (Contd.)	Superscripts 1 through 3 on the configuration symbol indicate the nozzle exit diameter: 1. 1.32 inches 2. 1.41 inches 3. 1.61 inches
P_1	Circular planform wing plate of 9.95-inch diameter, located on the model with the plate centerline at model station 21.000, and the lower surface at model waterline 6.405. The exit nozzle location was at the centerline of the plate. Ref. Dwg. WT-74-109328.
P_4	Circular planform wing plate of 18.38-inch diameter, located on the model with the plate centerline at model station 21.000, and the lower surface at model waterline 6.405. The exit nozzle location was at the centerline of the plate. Ref. Dwg. WT-74-109328.
P_{11}	Rectangular planform wing plate with two tandem exit nozzles. The chord was 21.475 inches with the leading edge at model station 8.763. The span was 18.475 inches. The lower surface of the plate was at model waterline 6.505. The exit nozzles were located at model stations 18.000 and 21.000. Ref. Dwg. WT-74-109328. Subscript -1 on the configuration symbol indicates that only the aft half of the plate was mounted on the internal balance, and only the aft exit nozzle was used. The forward half of the plate was attached to the non-metric plenum; the forward nozzle was removed and the hole in the plate sealed.

DESCRIPTION OF MODEL COMPONENTS (Continued)

Symbol	Description
P_{12}	Rectangular planform wing plate with two side-by-side exit nozzles. The chord was 18.475 inches with the leading edge at model station 11.763. The span was 27.825 inches. The lower surface of the plate was at model waterline 6.505. The exit nozzles were located at model station 21.000 and model buttock line 4.675. Ref. Dwg. WT-74-109328. Subscript -1 on the configuration symbol indicates that either the left or right hand exit nozzle was removed. Only that half of the plate containing the exit nozzle was mounted on the internal balance. The opposite half of the plate was attached to the non-metric plenum and the hole in the plate sealed. NOTE: Nozzles N_9 and N_8 are on the left and right hand side of the model, respectively.
P_{13}	Rectangular planform wing plate with two tandem exit nozzles. The chord was 36.475 inches with the leading edge at model station 11.763. The span was 18.475 inches. The lower surface of the plate was at model waterline 6.375. The exit nozzles were located at model stations 21.000 and 39.000. Ref. Dwg. WT-74-109328. Subscript -1 on the configuration symbol indicates that only the aft half of the plate was mounted on the internal balance, and only the aft exit nozzle was used. The forward half of the plate was attached to the non-metric plenum; the forward nozzle was removed and the hole in the plate sealed.
P_{31}	Triangular planform wing plate with three exit nozzles. The root chord was 26.043 inches with the leading edge apex at model station 10.185. The span was 22.138 inches. The lower surface of the plate was located at model waterline 6.445. The forward exit nozzle was located at model station 21.000. The aft two exit

DESCRIPTION OF MODEL COMPONENTS (Continued)

Symbol	Description
P_{31}	(Continued) nozzles were located longitudinally at model station 32.000 and laterally at buttock line 4.675. Ref. Dwg. WT-76-109331.
	Subscript -1 on the configuration symbol indicates that only the forward segment of the plate was mounted on the internal balance, and only the forward nozzle was used. The aft segment of the plate was attached to the non-metric plenum; the aft nozzles were removed and the holes in the plate sealed. The forward segment of the plate had a modified triangular planform with the trailing edge swept forward 23.03 degrees. The root chord was 17.293 inches, and the span was 12.460 inches.
	Subscript -2 on the configuration symbol indicates that a rectangular plate of .12-inch thickness was added to the upper surface of plate P_{31} to increase the planform area forward of the original leading edge. The added plate had a span of 18.5 inches, and extended from the original leading edge forward to model station 11.76.
P_{41}	Rectangular planform wing plate with four exit nozzles. The chord was 19.460 inches with the leading edge at model station 16.770. The span was 17.810 inches. The lower surface of the plate was located at model waterline 6.505. The exit nozzles were located at model stations 21.000 and 32.000 at model buttock line 4.675. Ref. Dwg. WT-76-109331.
	Subscript -1 on the configuration symbol indicates that only the right hand forward quarter of the plate was mounted on the internal balance, and only the right hand forward nozzle was used. The rest of the plate was attached to the non-metric plenum; the unused nozzles were removed and the holes in the plate sealed. The forward quarter of the plate had a chord of 9.715 inches and a span of 8.890 inches.

DESCRIPTION OF MODEL COMPONENTS (Continued)

Symbol	Description
RAKE	Airflow Survey Rake; a 7-inch long traversing rake used to measure temperature and pressure in both the fountain and reingestion flow fields. The rake contained fourteen 5-tube directional cone pressure probes on a .5-inch spacing, and thirteen chromel alumel thermocouples on .5-inch spacing. When used to survey the fountain flow field, the rake was oriented either horizontally with the probes pointing down at the ground board, or vertically with the probes pointing inboard toward the model centerline of symmetry. When used to survey the reingestion flow field, the rake was oriented vertically with the probes pointed upstream.

NOMENCLATURE

Definition of Tests

H	Height test: model ground height variation; model attitude, suction and blowing rates, and jet temperature were held constant.
R	Flow field survey test: survey rake position variation; model ground height, attitude, suction and blowing rates, and jet temperature were held constant.

Subscript numbers on the test symbols indicate that the data recording was as follows:

1,2	Model suction and blowing pressures and temperatures, and model force data were recorded.
1-3	Model suction and blowing pressures and temperatures, model force data, and duct inlet pressures and temperatures were recorded.
1-4	Model suction and blowing pressures and temperatures, model force data, duct inlet pressures and temperatures, and survey rake temperatures were recorded.
1,2,4,5	Model suction and blowing pressures and temperatures, model force data, and survey rake temperatures and pressures were recorded.

Coefficients

$\frac{DL}{FJ}$	Wind-on lift coefficient; lift increment due to jet interference divided by the jet thrust.
$\frac{DM}{FJC}$	Wind-on pitching moment coefficient; pitching moment increment due to jet interference divided by the jet thrust times the reference chord.
$\frac{DR}{FJB}$	Wind-on rolling moment coefficient, rolling moment increment due to jet interference divided by the jet thrust times the reference span.

$\frac{L}{FG}$	Wind-off lift coefficient; lift divided by the jet thrust.
$\frac{M}{FGC}$	Wind-off pitching moment coefficient; pitching moment divided by the jet thrust times the reference chord.
$\frac{R}{FGB}$	Wind-off rolling moment coefficient; rolling moment divided by the jet thrust times the reference span.

Note: All force and moment coefficients were referred to stability axes through the model moment reference point; located longitudinally at the centroid of the nozzle configuration, laterally at the model plane of symmetry, and vertically on the waterline plane of the nozzle exits.

Forces

DL	Lift increment due to jet interference; measured balance lift from a wind-on blowing power-on run minus the measured lift from a wind-on blowing power-off run. (lbs.).
DM	Pitching moment increment due to jet interference; measured balance pitching moment from a wind-on blowing power-on run minus the measured pitching moment from a wind-on blowing power-off run. (lbs.).
DR	Rolling moment increment due to jet interference; measured balance rolling moment from a wind-on blowing power-on run minus the measured rolling moment from a wind-on blowing power-off run (lbs.).
L	Measured balance lift from a wind-off blowing power-on run (lbs.).
M	Measured balance pitching moment from a wind-off blowing power-on run (lbs.).
R	Measured balance rolling moment from a wind-off blowing power-on run (lbs.).

LTAU	Aerodynamic lift tare; measured balance lift from a wind-on blowing power-off run (lbs.)
MTAU	Aerodynamic pitching moment tare; measured balance pitching moment from a wind-on blowing power-off run (lbs.).
RTAU	Aerodynamic rolling moment tare; measured balance rolling moment from a wind-on blowing power-off run (lbs.).
FJ	Jet thrust; total thrust of all blowing nozzles (lbs.). $FJ = (FJ/\delta)_{CALIB.}$
$(FJ/\delta)_{CALIB.}$	Jet thrust normalized to standard air pressure. The jet thrust for each nozzle configuration was determined using the plenum pressure versus thrust relationships obtained in pretest calibrations of each of the nozzle configurations.
δ (D)	Ratio of ambient static pressure to standard pressure. $\delta = P_O/14.696$. The additional subscript i refers to the duct inlet static pressure.

Pressures

PO (P_O)	Tunnel ambient static pressure, PSIA.
QO (q_O)	Free stream dynamic pressure, PSF. $q_O = .5 \rho V_O^2$.
QF (q_F)	Fountain flow field dynamic pressure, PSI. $q_F = .7 P_O M_F^2$ (Note (1) Page 44)
QFV (q_{FV})	Vertical component of the fountain dynamic pressure, psi. $q_{FV} = q_F \cos^2\gamma_F \cos^2\theta_F$ (Note 1 Page 44)
QR (q_R)	Reingestion flow field dynamic pressure, PSF. $q_R = .7 P_O M_R^2 144$ (Note (1) Page 44)

QRV (q_{RV})	Axial component of the reingestion dynamic pressure, PSF. $q_{RV} = q_R \cos^2 \gamma_R \cos^2 \vartheta_R$ (Note (1) Page 44)
PP	Nozzle plenum pressure, PSI. Additional subscripts 1 and 3 refer to the forward and aft plenums respectively.
PP/δ	Nozzle plenum pressure normalized to standard air pressure, PSIA.
PTE(P_{T_e})	Nozzle exit total pressure, PSIA. Additional subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration. $P_{T_e} = (NPR)(P_O)$
PE(P_e)	Nozzle exit static pressure, PSIA. Additional subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration. if: NPR > 1.893 , $P_e = .5283\ P_{T_e}$ NPR $\leq$ 1.893 , $P_e = P_O$
QE (q_e)	Nozzle exit dynamic pressure, PSI. Additional subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration. if: NPR > 1.893, $q_e = .3698\ P_{T_e}$ NPR $\leq$ 1.893, $q_e = .7\ P_e\ M_e^2$
PD (P_D)	Duct inlet ejector drive pressure, PSI; Plenum pressure in the compressed air inlet to the primary side of the duct inlet ejectors. Additional subscripts L and R refer to left and right hand ducts, respectively.
DPI	Duct inlet static pressure relative to free stream static pressure, PSI. Additional subscripts L and R refer to the left and right hand duct inlets, respectively.
NPR	Nozzle exit pressure ratio. $NPR = P_{T_e}/P_O$ The nozzle exit pressure ratio for each nozzle configuration was determined using the plenum pressure versus NPR relationships obtained in pre test calibrations of each of the nozzle configurations.

PF(P_F)	Fountain flow field total pressure as measured by the 14-probe flow survey rake, PSIA. (Note (1) page 44)
PR(P_R)	Reingestion flow field total pressure as measured by the 14-probe flow survey rake, PSIA. (Note (1) page 44).
Temperatures:	
TB(T_B)	Balance temperature, ^oF. Air temperature in the region of the model internal balance cavity.
TO(T_O)	Tunnel ambient temperature, ^oF.
TP(T_P)	Nozzle plenum temperature, ^oF. Additional subscripts 1 and 2 refer to the forward and aft plenums, respectively.
TTE(T_{T_e})	Nozzle exit total temperature, ^oR. Additional subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration. $T_{T_e} = TP$
DTTE (ΔT_{T_e})	Nozzle exit total temperature minus free stream static temperature, ^oF. Additional subscript A indicates the average value of the up to four individual nozzles of a nozzle configuration. $\Delta T_{T_e} = T_{T_e} - T_O$
TE(T_e)	Nozzle exit static temperature, ^oR. Additional subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration. if: NPR $>$ 1.893, $T_e = .5283\ T_{T_e}$ NPR $\leq$ 1.893, $T_e = T_{T_e}/(1 + .2M_e^2)$
DTE(ΔT_e)	Nozzle exit static temperature minus free stream static temperature, ^oF. Additional subscript A indicates the average value of the up to four individual nozzles of a nozzle configuration. $\Delta T_e = T_e - T_O$
T_i	Duct inlet total temperature, ^oR. Additional subscripts L and R refer to the left and right hand ducts, respectively.
ΔT_i	Duct inlet total temperature minus free stream static temperature, ^oF. Additional subscripts L and R refer to the left and right hand ducts, respectively.

TILR ($T_{i_{LR}}$)	Duct inlet temperature ratio of the left hand duct, $T_{i_{LR}} = \Delta T_{i_L} / \Delta T_{T_{eA}}$
TIRR ($T_{i_{RR}}$)	Duct inlet temperature ratio of the right hand duct, $T_{i_{RR}} = \Delta T_{i_R} / \Delta T_{T_{eA}}$
ΔT_{EL}	Left hand inlet duct external temperature minus free stream static temperature, °F. Additional subscripts 1 through 3 refer to the three thermocouple locations shown in the sketch on page 12.
ΔT_{ER}	Right hand duct external temperature minus free stream static temperature, °F. Additional subscripts 1 through 3 refer to the three thermocouple locations shown in the sketch on page 12.
TEL()R	Left hand inlet duct external temperature ratio. The number 1 through 3 within the brackets refer to the three thermocouple locations shown in the sketch on page 12. TEL( )R = $\Delta T_{E_{L()}} / \Delta T_{T_{eA}}$
TER()R	Right hand inlet duct external temperature ratio. The numbers 1 through 3 within the brackets refer to the three thermocouple locations shown in the sketch on page 12. TER( )R = $\Delta T_{E_{R()}} / \Delta T_{T_{eA}}$
TF(T_F)	Fountain flow field total temperature as measured by the 13-thermocouple flow survey rake, °R.
TSF(T_{S_F})	Fountain flow field static temperature, °R. $T_{S_F} = T_F/(1 + .2M_F^2)$ (Note (1) page 44).
DTF(ΔT_F)	Fountain flow field total temperature minus free stream static temperature, °F. $\Delta T_F = T_F - T_O$
DTSF(ΔT_{S_F})	Fountain flow field static temperature minus free stream static temperature, °F. $\Delta T_{S_F} = T_{S_F} - T_O$ (Note (1) page 44).

TTRF ($T_{T_{RF}}$)	Fountain flow field total temperature ratio. $T_{T_{RF}} = \Delta T_F / \Delta T_{T_{eA}}$
TSFR ($T_{S_{FR}}$)	Fountain flow field static temperature ratio. $T_{S_{FR}} = \Delta T_{S_F} / \Delta T_{T_{eA}}$ (Note (1) page 44.)
TR(T_R)	Reingestion flow field total temperature as measured by the 13-thermocouple flow survey rake, ^oR.
TSR(T_{S_R})	Reingestion flow field static temperature, ^oR. $T_{S_R} = T_R/(1 + .2 M_R^2)$ (Note (1) Page 44.)
DTR(ΔT_R)	Reingestion flow field total temperature minus free stream static temperature, ^oF. $\Delta T_R = T_R - T_O$
DTSR(ΔT_{S_R})	Reingestion flow field static temperature minus free stream static temperature, ^oF. $\Delta T_{S_R} = T_{S_R} - T_O$ (Note (1) Page 44.)
TTRR ($T_{T_{RR}}$)	Reingestion flow field total temperature ratio. $T_{T_{RR}} = \Delta T_R / \Delta T_{T_{eA}}$
TSRR ($T_{S_{RR}}$)	Reingestion flow field static temperature ratio. $T_{S_{RR}} = \Delta T_{S_R} / \Delta T_{T_{eA}}$
θ_T	Ratio of air supply temperature to standard temperature. $\theta_T = T_P/518.5$. The additional subscript i refers to the duct inlet temperature.

Symbols:

α_g (ALFAG)	Geometric angle of attack of the model wing plate relative to the ground plane (wind and blowing power off), degrees.
θ (THETA)	Geometric angle of attack of the model wing plate relative to the ground plane (corrected for model and support system deflection due to jet thrust and air loads), degrees.

θ_F (THETAF) — Fountain flow direction in the YZ plane as measured by the 14-probe flow survey rake, degrees. $\theta_F = 0^\circ$ when the fountain flow is rising vertically from the ground plane, and is positive when the flow is inclined to the right (as viewed from the pilots seat). (Note (1)).

γ_F (GAMMAF) — Fountain flow direction in the XZ plane as measured by the 14-probe flow survey rake, degrees. $\gamma_F = 0^\circ$ when the fountain flow is rising vertically from the ground plane, and is positive when the flow is inclined to the rear. (Note (1)).

Note: (1) The ability of the airflow survey rake to measure pressure characteristics at large flow angles, was determined in a pre-test wind tunnel calibration of the rake, LST 720. From analysis of this calibration, all pressure characteristics computed from the rake data were suppressed if any of the following condition were indicated by the rake pressure measurements.

a. The flow angularity at a pressure probe exceeds 42°.

b. Probe total pressure minus free stream static pressure indicates negative.

θ_R (THETAR) — Reingestion flow direction in the XY plane as measured by the 14-probe flow survey rake, degrees. $\theta_R = 0^\circ$ when the reingestion flow is moving directly aft, and is positive when the flow is inclined to the right (as viewed from the pilots seat). (Note (1) , page 44.)

γ_R (GAMMAR) — Reingestion flow direction in the XZ plane as measured by the 14-probe flow survey rake, degrees. $\gamma_R = 0^\circ$ when the reingestion flow is moving directly aft, and is positive when the flow is inclined downward. (Note (1) , page 44.)

ϕ (PHI) — Geometric angle of roll of the model wing plate relative to the ground plane at $\alpha_g = 0^\circ$ (corrected for model deflection due to air loads), degrees.

Ψ_g (PSIG)	Geometric angle of yaw of the model wing plate plane of symmetry relative to the tunnel axis (wind and blowing power off), degrees.
Ψ (PSI)	Geometric angle of yaw of the model wing plate plane of symmetry relative to the tunnel axis (corrected for model deflection due to airloads), degrees.
H_g (HG)	Ground height of the model moment reference point relative to the ground plane (wind and blowing power off) at $\alpha_g = 0^o$, inches. The location of the model moment reference point is given in the note on page 38.
H (h)	Ground height of the model moment reference point relative to the ground plane (corrected for model and support system deflection due to jet thrust and airloads, as well as for the vertical translation of the model moment reference point with angle of attack), inches. The location of the model moment reference point is given in the note on page 38.
DE (D_e)	Nozzle exit diameter, inches, Superscript numbers 1 through 3 on the nozzle configuration symbols, "N", refer to the nozzle exit diameters of 1.32, 1.41 & 1.61-inches, respectively.
B (b)	Reference unit of length on which rolling moment coefficients were based, inches. The values for each wing plate are given in the table on page 17.
C (c)	Reference unit of length on which pitching moment coefficients were based, inches. The values for each wing plate are given in the table on page 17.
VO (V_o)	Free stream velocity, knots. $V_o = .5921\ (2\ q_o/\rho)^{\frac{1}{2}}$
ρ	Free stream mass density, slugs/ft^3.
ρ_e	Nozzle exit mass density, slugs/ft^3. $\rho_e = .08388\ (P_e/T_e)$

UE (U_e) — Nozzle exit velocity, ft/sec.
$U_e = 49.06\ M_e\ (T_e)^{\frac{1}{2}}$ Subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration.

ME (M_e) — Nozzle exit Mach number. Subscripts 1 through 4 refer to the up to four individual nozzles of a nozzle configuration.

If: NPR $>$ 1.893 $\quad M_e = 1.0$

NPR $\leq$ 1.893 $\quad M_e = \left\{5 \left[\left(\frac{P_{T_e}}{P_o}\right)^{2/7} - 1\right]\right\}^{1/2}$

RNE — Nozzle exit Reynolds number, based on the exit diameter, millions. Subscripts 1 through 4 refer to the up to four nozzles of a nozzle configuration.

$$RNE = \frac{\rho_e\ U_e\ D_e}{\mu_e}$$

μ_e — Nozzle exit coefficient of viscosity, lb. sec/ft^2. Subscripts 1 through 4 refer to the up to four nozzles of a nozzle configuration.

WAE (W_{a_e}) — Nozzle exit weight flow, lb/sec. Subscripts 1 through 4 refer to the up to four nozzles of a configuration.

$$W_{a_e} = \left(\delta / \sqrt{\theta_T}\right) \left(\frac{W_{a_e}\sqrt{\theta_T}}{\delta}\right)_{\text{CALIB.}}$$

$\left(\frac{W_{a_e}\sqrt{\theta_T}}{\delta}\right)_{\text{CALIB.}}$ — Nozzle exit weight flow normalized to standard air pressure and temperature. The weight flow for each nozzle configuration was determined using the plenum pressure and temperature versus weight flow relationships obtained in pre test calibrations of each of the nozzle configurations.

WAI (W_{a_i}) — Duct inlet weight flow, lb/sec. Additional subscripts L and R refer to the left and right hand ducts, respectively.

$$W_{a_i} = \delta_i / \sqrt{\theta_{T_i}} \qquad \left(\frac{W_{a_i}\sqrt{\theta_{T_i}}}{\delta_i}\right)_{\text{CALIB.}}$$

$\left(\frac{W_{a_i}\sqrt{\theta_{T_i}}}{\delta_i}\right)_{CALIB.}$ Duct inlet weight flow normalized to standard air temperature and pressure. Weight flows were determined using the ejector drive pressure versus weight flow relationships obtained in pre test calibrations of the duct inlets.

UF(U_F) Fountain flow field velocity, ft/sec.

$U_F = 49.06\ M_F\ (T_{S_F})^{\frac{1}{2}}$ (Note (1) page 44.)

MF(M_F) Fountain flow field Mach number.

$$M_F = \left\{5\left[\left(\frac{P_F}{P_O}\right)^{2/7} - 1\right]\right\}^{1/2}$$ (Note (1) Page 44.)

MASF(m_F) Fountain flow field mass flow rate per unit area, slugs/ft.^{2} sec.

$m_F = 2(12)^2\ q_F/U_F$

UR(U_R) Reingestion flow field velocity, ft/sec.

$U_R = 49.06\ M_R(T_{S_R})^{\frac{1}{2}}$ (Note (1) Page 44.)

MR(M_R) Reingestion flow field Mach number.

$$M_R = \left\{5\left[\left(\frac{P_R}{P_O}\right)^{2/7} - 1\right]\right\}^{1/2}$$

MASR(m_R) Reingestion flow field mass flow rate per unit area, slugs/ft^3 sec.

$m_R = 2\ q_R/U_R$

X_R Longitudinal location of the flow survey rake control point, inches. The control point was located at the face of the cone probe row in line with the axial centerline of the probe support sting. The zero origin was located at the centroid of the duct exit nozzles for the fountain surveys; and at fuselage nose (model station 10.5) for the reingestion surveys.

$XR(X_r)$	Longitudinal location of a pressure probe in the 14-probe flow survey rake, inches. An additional subscript T indicates the location of a thermocouple in the same rake.
Y_R	Lateral location of the flow survey rake control point, inches. The zero origin was located at the model plane of symmetry (B. L. 0).
$YR(Y_r)$	Lateral location of a pressure probe in the 14-probe flow survey rake, inches. An additional subscript T indicates the location of a thermocouple in the same rake.
Z_R	Vertical location of the flow survey rake control point, inches. The zero origin was located at the ground plane.
$ZR(Z_r)$	Vertical location of a pressure probe in the 14-probe flow survey rake, inches. An additional subscript T indicates the location of a thermocouple in the same rake.

GENERAL DYNAMICS
Convair Division

REPORT LST 711
PAGE 46.0

DATE	RUN	CONFIGURATION	TYPE RUN	V_c (KNOTS)	α_g°	ψ_g°	H_g (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_{P_1}/P_{P_3} (PSI)	P_{D_4}/P_{D_R} (PSI)	T °F	TARE	PHOTO	REMARKS
5/3/77	1	N_{13}^2 P_{13-1} F_1 I_1 RAKE HORIZ.	H_{1-3}	3	0	0	A	—	—	—	0 169	3.2 4.5	400		✓	①, ③
	2	N_3^2 N_{13}^2 P_{13}	↓	↓	↓	↓	↓	—	—	—	177 169	9.5 11.0	↓	✓	✓	①, ③
	3	↓	$R_{1,2,3,5}$	↓	↓	↓	3.53	1.06	D	0	↓	0	↓	↓	✓	①, ③
	4	↓	↓	↓	↓	↓	↓	1.93	↓	↓	↓	↓	↓	↓	↓	①, ③
	5	↓	↓	↓	↓	↓	11.28	9.68	↓	↓	↓	↓	↓	↓	↓	①, ③
	6	↓	↓	↓	↓	↓	↓	4.94	↓	↓	↓	↓	↓	↓	↓	①, ③
5/4/77	7	↓	↓	↓	↓	↓	7.05	3.53	↓	↓	177 150	↓	↓	↓	↓	③
	8	↓	↓	↓	↓	↓	↓	2.12	↓	↓	↓	↓	↓	↓	↓	③
	9	↓	↓	↓	↓	↓	↓	5.30	↓	↓	↓	↓	↓	↓	↓	③
	10	↓	H_{1-3}	↓	↓	↓	A	—	—	—	↓	9.5 11.0	↓	↓	↓	②, ③
	11	↓	$R_{1,2,4,5}$	↓	↓	↓	3.53	1.06	E	0	↓	0	↓	↓	↓	③
	12	↓	↓	↓	↓	↓	↓	1.83	↓	↓	↓	↓	↓	↓	↓	③
	13	↓	↓	↓	↓	↓	4.94	1.06	↓	↓	↓	↓	↓	↓	↓	③
	14	↓	↓	↓	↓	↓	↓	2.12	↓	↓	↓	↓	↓	↓	↓	③
	15	↓	↓	↓	↓	↓	↓	3.24	↓	↓	↓	↓	↓	↓	↓	③
	16	↓	↓	↓	↓	↓	11.28	4.94	↓	↓	↓	↓	↓	↓	↓	③
	17	↓	↓	↓	↓	↓	↓	7.78	↓	↓	↓	↓	↓	↓	↓	③
	18	↓	↓	↓	↓	↓	↓	2.12	↓	↓	↓	↓	↓	↓	↓	③
	19	↓	H_{1-3}	↓	↓	↓	A	—	—	—	↓	↓	65	↓	↓	③
	20	N_{13}^2 P_{13-1} ↓ ↓	$H_{1,2}$	↓	↓	↓	↓	—	—	—	0 150	↓	60	↓	↓	③

NOTE: ① THE AFT PLENUM CHOKE PLATE WAS PARTLY PLUGGED DURING RUNS 1 THRU 6.
② FWD. NORMAL FORCE RECORDINGS ARE INVALID DUE TO INSTRUMENTATION FAILURE.
③ FORCE DATA FROM RUNS 1 THRU 40 IS INVALID DUE TO A LOOSE WIRE IN THE BALANCE.

HEIGHT SCHEDULE H_g ~ A : 3.53, 4.23, 4.94, 5.64, 6.35, 7.05, 7.76, 8.46, 9.87, 11.28.
RAKE SCHEDULE Y_R ~ D : -1.41, 0, 1.41, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87
E : -2.82, -1.41, 0, 1.41, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87

DATE	RUN	CONFIGURATION	TYPE RUN	V_o (KNOTS)	$\alpha_g°$	$\psi_g°$	H_g (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_{P1}/P_{P3} (PSI)	P_{SL}/P_{DR} (PSI)	T °F	TARE	PHOTO	REMARKS
5/5/77	20-1	$N_{13}^2 P_{13-1}$ $F_1 I_1$ RAKE HORIZ.	$H_{1,2}$	3	0	0	A	—	—	—	0 / 150	0	60			③
	21	$N_2^2 N_3^2 P_{11}$	↓	↓	↓	↓	↓	—	—	—	171 / 0	↓	↓			↓
	22	↓	$R_{1,2,4,5}$	↓	↓	↓	4.94	1.06	G	0	↓	↓	↓			↓
	23	↓	↓	↓	↓	↓	↓	2.12	↓	↓	↓	↓	↓			↓
	24	↓	↓	↓	↓	↓	7.05	↓	↓	↓	↓	↓	↓			↓
	25	↓	↓	↓	↓	↓	↓	5.13	S	↓	↓	↓	↓			↓
	26	↓	↓	↓	↓	↓	11.23	9.38	↓	↓	↓	↓	↓			↓
	27	↓	H_{1-3}	↓	↓	↓	A	—	—	—	↓	8.1 / 9.9	400			↓
	28	$N_3^2 P_{11-1}$	$H_{1,2}$	↓	↓	↓	↓	—	—	—	177 / 0	0	60			↓
	29	↓	H_{1-3}	↓	↓	↓	↓	—	—	—	↓	3.4 / 4.7	400			↓
5/6/77	30	$N_3' P_{31-1}$	↓	↓	↓	↓	B	—	—	—	151 / 0	2.9 / 3.9	↓		✓	↓
	31	$N_3^3 P_{31-1}$	↓	↓	↓	↓	C	—	—	—	230 / 0	4.8 / 6.0	↓		↓	↓
	32	$N_3^3 N_{10}^3 N_{11}^3 P_{31}$	↓	↓	↓	↓	↓	—	—	—	230 / 242	0	↓		✓	↓
	33	↓	$R_{1,2,4,5}$	↓	↓	↓	8.05	2.42	M	0	↓	↓	↓		↓	↓
	34	↓	↓	↓	↓	↓	↓	4.03	↓	↓	↓	↓	↓		↓	↓
5/7/77	35	↓	↓	↓	↓	↓	5.64	2.42	↓	↓	↓	↓	↓		↓	↓
	36	↓	↓	↓	↓	↓	↓	3.39	↓	↓	↓	↓	↓		↓	↓
	37	↓	$H_{1,2}$	↓	↓	↓	C	—	—	—	↓	↓	↓		↓	↓
	37-1	↓	↓	↓	↓	↓	↓	—	—	—	↓	↓	↓		↓	↓
	38	$N_3' N_{10}' N_{11}' P_{31}$	$R_{1,2,4,5}$	↓	↓	↓	6.60	1.98	L	0	151 / 154	↓	↓		↓	↓

NOTE: ③ FORCE DATA FROM RUNS 1 THRU 40 IS INVALID DUE TO A LOOSE WIRE IN THE BALANCE.

RAKE SCHEDULE Y_R ~ F: -3.25, -2.25, -1.25, -.25, .25, 1.25, 2.25, 3.25.
G: 2.00, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87.
S: 1.25, 2.00, 2.82, 4.23, 5.64, 7.05, 8.46

HEIGHT SCHEDULE ~ H_g B: 3.30, 3.96, 4.62, 5.28, 5.94, 6.60, 7.26, 7.92, 9.24, 10.56.
C: 4.03, 4.83, 5.64, 6.44, 7.25, 8.05, 8.86, 9.66, 11.27, 12.88

DATE	RUN	CONFIGURATION	TYPE RUN	V_∞ (KNOTS)	α_g°	ψ_g°	H_g (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_{P_1}/P_{P_3} (PSI)	P_{D_4}/P_{D_R} (PSI)	T °F	TARE	PHOTO	REMARKS
5/7/77	39	$N_3' N_{10}' N_{11}' P_{31}$ $F_1 I_1$ RAKE HORIZ.	$R_{1,2,4,5}$	3	0	0	6.60	3.30	L	0	151 / 154	0	400			(3)
	40	↓ ↓ ↓	↓	↓	↓	↓	↓	4.90	↓	↓	↓	↓	↓			(3)
	41						4.62	.99								
	42						↓	1.98								
	43						↓	2.92								
5/10/77	44						3.30	.99								
	45						↓	1.20								
	46						↓	1.60								
	47	↓ ↓					10.56	1.98	↓		↓					
	48	$N_8' N_9' N_{10}' N_{11}' P_{41}$ $F_1 I_2$					6.60	|	N		147 / 154					
	49	↓ ↓ ↓					↓	3.30	↓		↓					
	50						↓	4.90								
	51						4.62	1.98								
5/11/77	52						↓	2.92								
	53						10.56	4.62								
	54		↓				↓	8.86	↓	↓						
	55	↓ ↓	$H_{1,2}$				B	—	—	—	↓					
	56	$N_8' P_{41-1}$	↓			↓	↓	—	—	—	151 / 0	↓	↓			
	57	$N_8^2 P_{12-1}$	H_{1-3}			-90	A	—	—	—	173 / 0	5.5 / 5.5	200			(1)
	58	↓ ↓ ↓	↓	↓	↓	↓	↓	—	—	—	↓	4.8 / 4.8	400			

NOTE: (1) FORCE DATA IS NOT AS EXPECTED BY AERODYNAMICS REPRESENTATIVE. REPEAT AS RUN 56-1.
(3) FORCE DATA FROM RUNS 1 THRU 40 IS INVALID DUE TO A LOOSE WIRE IN THE BALANCE.

RAKE SCHEDULE, Y_R ~ J : 1.00, 1.41, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87
T : -1.41, 0, .70 1.41, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87.
H : .48, 1.41, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87.

DATE	RUN	CONFIGURATION	TYPE RUN	V_o (KNOTS)	α_E °	ψ_E °	H_8 (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_{P_1} P_{P_3} (PSI)	P_{D_U} P_{D_R} (PSI)	T °F	TARE	PHOTO	REMARKS
5/11/77	59	$N_8^2 N_9^2 P_{12}$ $F_1 I_2$ RAKE NOMIN.	H_{1-3}	3	0	-90	A	—	—	—	171 0	12.0 12.0	200			
	60	↓	↓	↓	↓	↓	↓	—	—	—	↓	10.0 10.0	400			
5/12/77	61	↓	$R_{1,2,4,5}$	↓	↓	↓	7.05	2.12	J	0	↓	0	200		✓	
	62	↓	↓	↓	↓	↓	↓	3.53	↓	↓	↓	↓	↓	↓	↓	↓
	63	↓	↓	↓	↓	↓	↓	5.30	T	↓	↓	↓	↓	↓	↓	↓
	64	↓	↓	↓	↓	↓	3.53	1.06	H	↓	↓	↓	400	↓	↓	↓
	65	↓	↓	↓	↓	↓	↓	1.83	T	↓	↓	↓	↓	↓	↓	↓
	66	↓	↓	↓	↓	↓	4.94	1.06	I	↓	↓	↓	↓	↓	↓	↓
	67	↓	↓	↓	↓	↓	↓	2.12	↓	↓	↓	↓	↓	↓	↓	↓
	68	↓	↓	↓	↓	↓	↓	3.24	T	↓	↓	↓	↓	↓	↓	↓
	69	↓	↓	↓	↓	↓	7.05	2.12	J	↓	↓	↓	↓	↓	↓	↓
	70	↓	↓	↓	↓	↓	↓	3.53	↓	↓	↓	↓	↓	↓	↓	↓
	71	↓	↓	↓	↓	↓	↓	5.30	T	↓	↓	↓	↓	↓	↓	↓
	72	↓	↓	↓	↓	↓	11.28	2.12	K	↓	↓	↓	↓	↓	↓	↓
	73	↓	↓	↓	↓	↓	↓	4.94	↓	↓	↓	↓	↓	↓	↓	↓
	74	↓	↓	↓	↓	↓	↓	7.78	↓	↓	↓	↓	↓	↓	↓	↓
	75	↓	↓	↓	↓	↓	↓	9.58	T	↓	↓	↓	↓	↓	↓	↓
	76	↓	↓	↓	10	↓	6.34	2.12	J	↓	↓	↓	↓	↓	✓	↓
	77	↓	↓	↓	↓	↓	↓	3.53	↓	↓	↓	↓	↓	↓	↓	↓
	78	↓	↓	↓	↓	↓	↓	4.90	T	↓	↓	↓	↓	↓	↓	↓

RAKE SCHEDULE, X_R ~ I: .69, 1.41, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87.
K: 1.62, 2.82, 4.23, 5.64, 7.05, 8.46, 9.87.

HEIGHT SCHEDULE, H_8 ~ R: 2.82, 3.52, 4.23, 4.93, 5.64, 6.34, 7.05, 7.75, 9.16, 10.57.

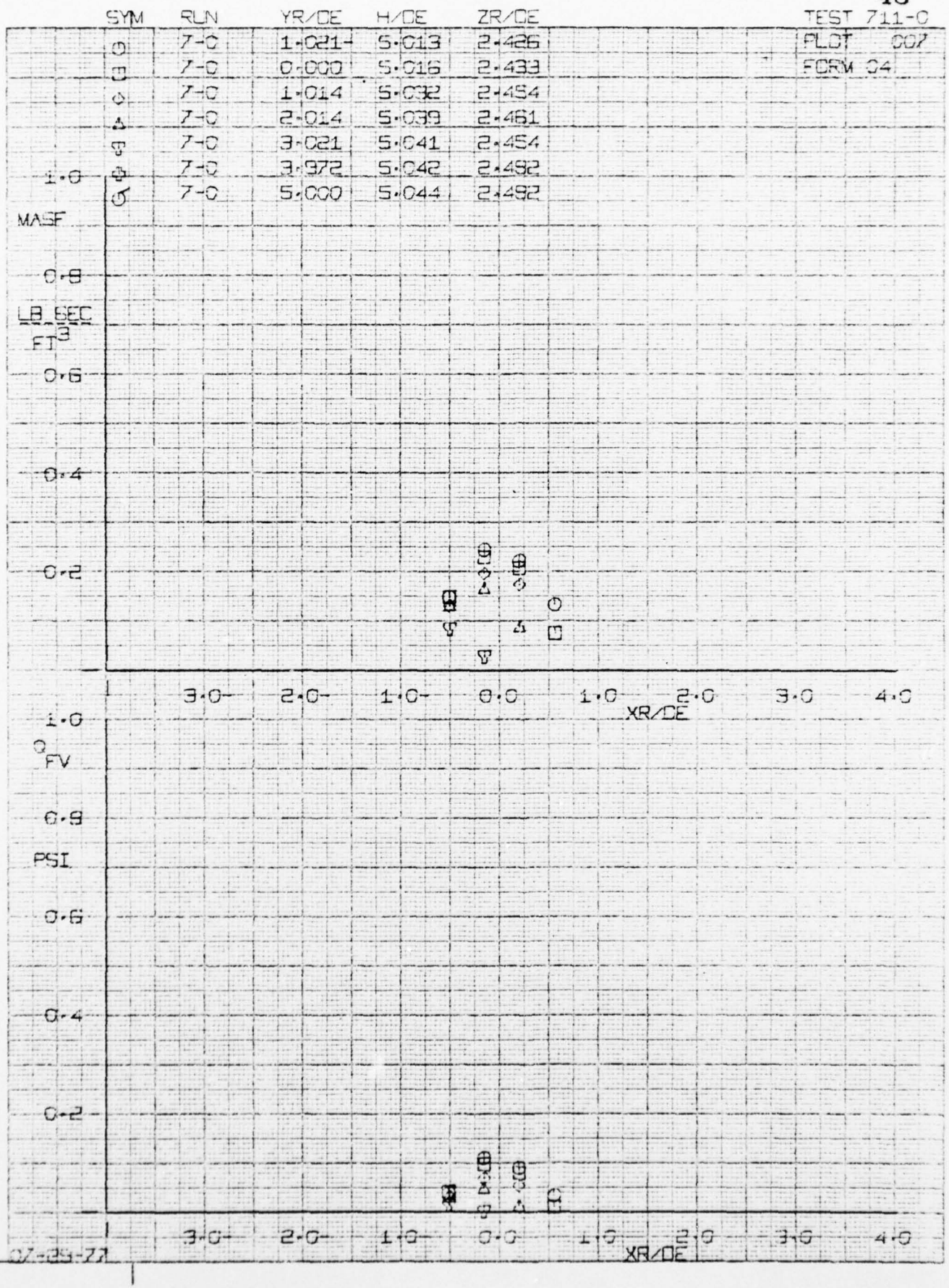
DATE	RUN	CONFIGURATION	TYPE RUN	V_∞ (KNOTS)	α_E°	γ_E°	H_B (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_{T_1}/P_{T_3} (PSI)	$P_{B_{LH}}/P_{B_{DR}}$ (PSI)	T °F	TARE	PHOTO	REMARKS
5/12/77	79	$N_8^2 N_9^2 P_{12}$ $F_1 I_2$ RAKE HORIZ.	H_{1-3}	3	10	-90	R	—	—	—	171 / 0	10.0 / 10.0	400			
	80	RAKE VERT.	$R_{1,2,4,5}$		0	0	7.05	3.60	9.55	F		0		✓	✓	
	81					-90	3.53						400			
	82	$N_3^2 P_{11-1}$ $F_1 I_1$	$H_{1,2}$			0	A	—	—	—	177 / 0					
	83	$N_2^2 N_3^2 P_{11}$ RAKE HORIZ.						—	—	—	171 / 0					
	83-1							—	—	—						
5/13/77	84	$N_3^1 P_{31-1}$					B	—	—	—	151 / 0					
	85	$N_3^3 P_{31-1}$					C	—	—	—	230 / 0		70			
	86							—	—	—			400			
	87	$N_3^3 N_{10}^3 N_{11}^3 P_{31}$						—	—	—	230 / 242					
	88	$N_3^1 N_{10}^1 N_{11}^1 P_{31}$	H_{1-3}				B	—	—	—	151 / 154	17.5 / 17.5				
5/18/77	89	$N_8^1 P_{41-1}$ $F_1 I_2$	$H_{1,2}$	0				—	—	—	151 / 0	0	70			
	56-1							—	—	—			400			
	90	$N_8^2 N_9^2 P_{12}$				-90	A	—	—	—	171 / 0		70			
	91		$R_{1,2,4,5}$	30			7.05	2.12	J	0			400			
	92							3.53								
	93							5.30	T							
	94		$H_{1,2}$				A	—	—	—	0		70			
	95		H_{1-3}					—	—	—	171 / 0	12.0 / 12.0	400			
	96	$N_8^2 P_{12-1}$	$H_{1,2}$					—	—	—	0	0	70			

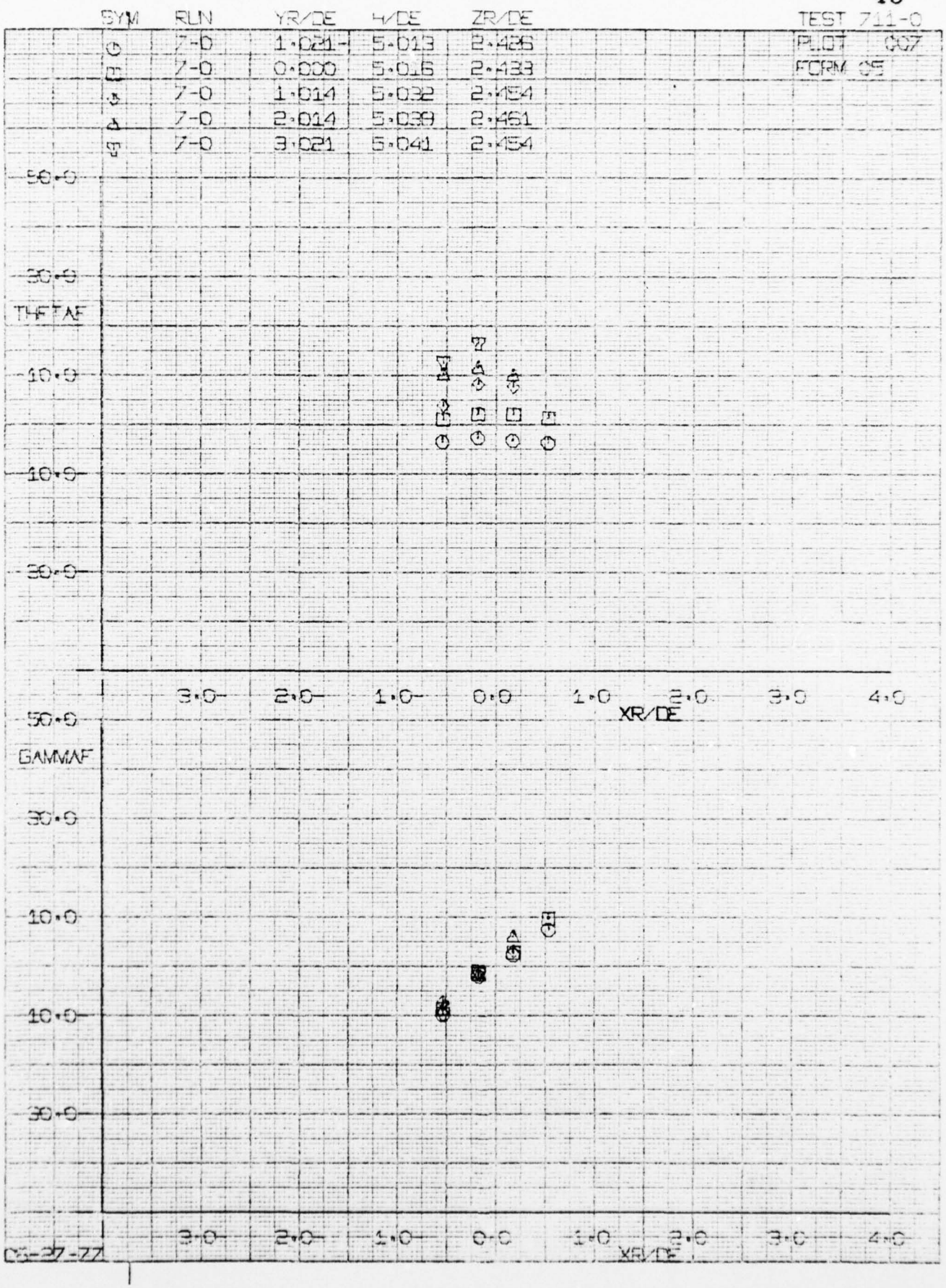
NOTE: RUN 83; ZERO SHIFT IN FWD. NORMAL FORCE.

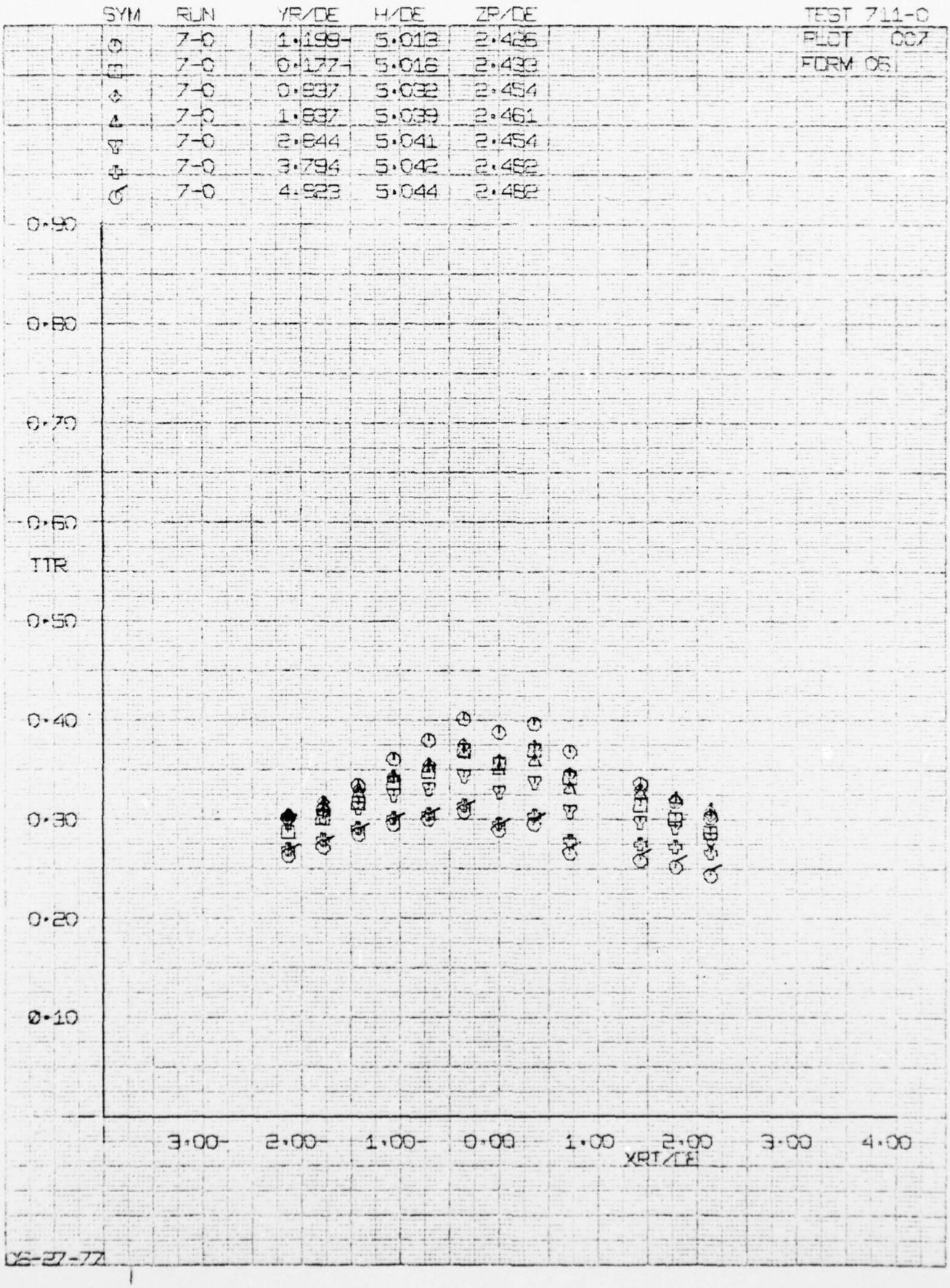
DATE	RUN	CONFIGURATION	TYPE RUN	V_0 (KNOTS)	α_i°	γ_i°	Hg (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_P/P_3 (PSI)	P_{BH}/P_{DR} (PSI)	T °F	TARE	PHOTO	REMARKS
5/18/77	97	N_8^2 P_{12-1} F_1 I_2 RAKE HORIZ.	H_{1-3}	30	0	-90	A	—	—	—	173_0	5.5 5.5	400			
	98	N_9^2 P_{12-1}	$H_{1,2}$	0				—	—	—	—	0	70			
	99			30				—	—	—	0	—	—			
	100		H_{1-3}					—	—	—	173_0	5.5 5.5	400			
	101	N_3^2 P_4	$H_{1,2}$	0				—	—	—	177_0	0	70		✓	
	102							—	—	—	—	—	400			
	103	N_3^2 P_1						—	—	—	—	—	70		✓	
	104							—	—	—	—	—	400			

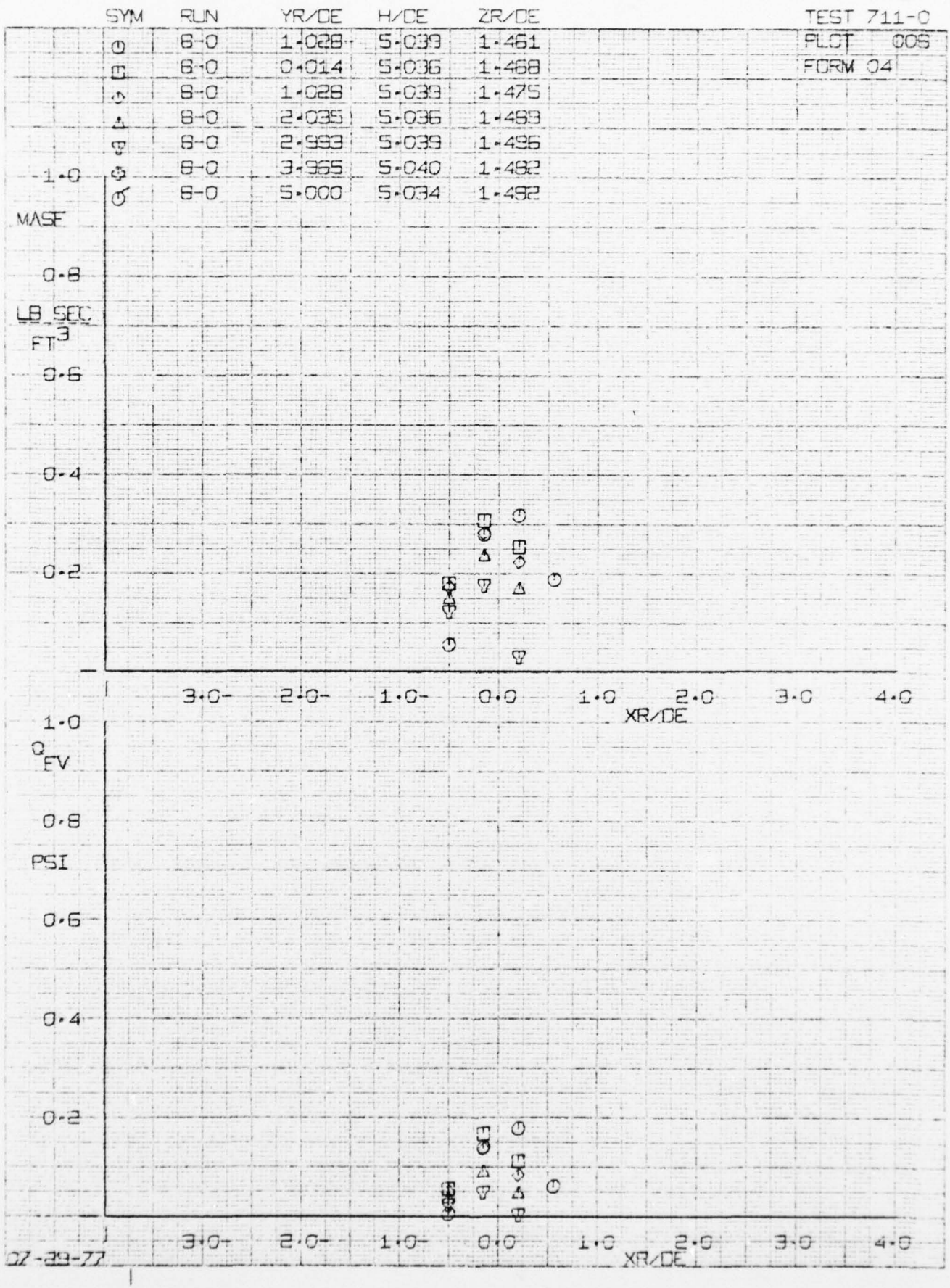
LST 711

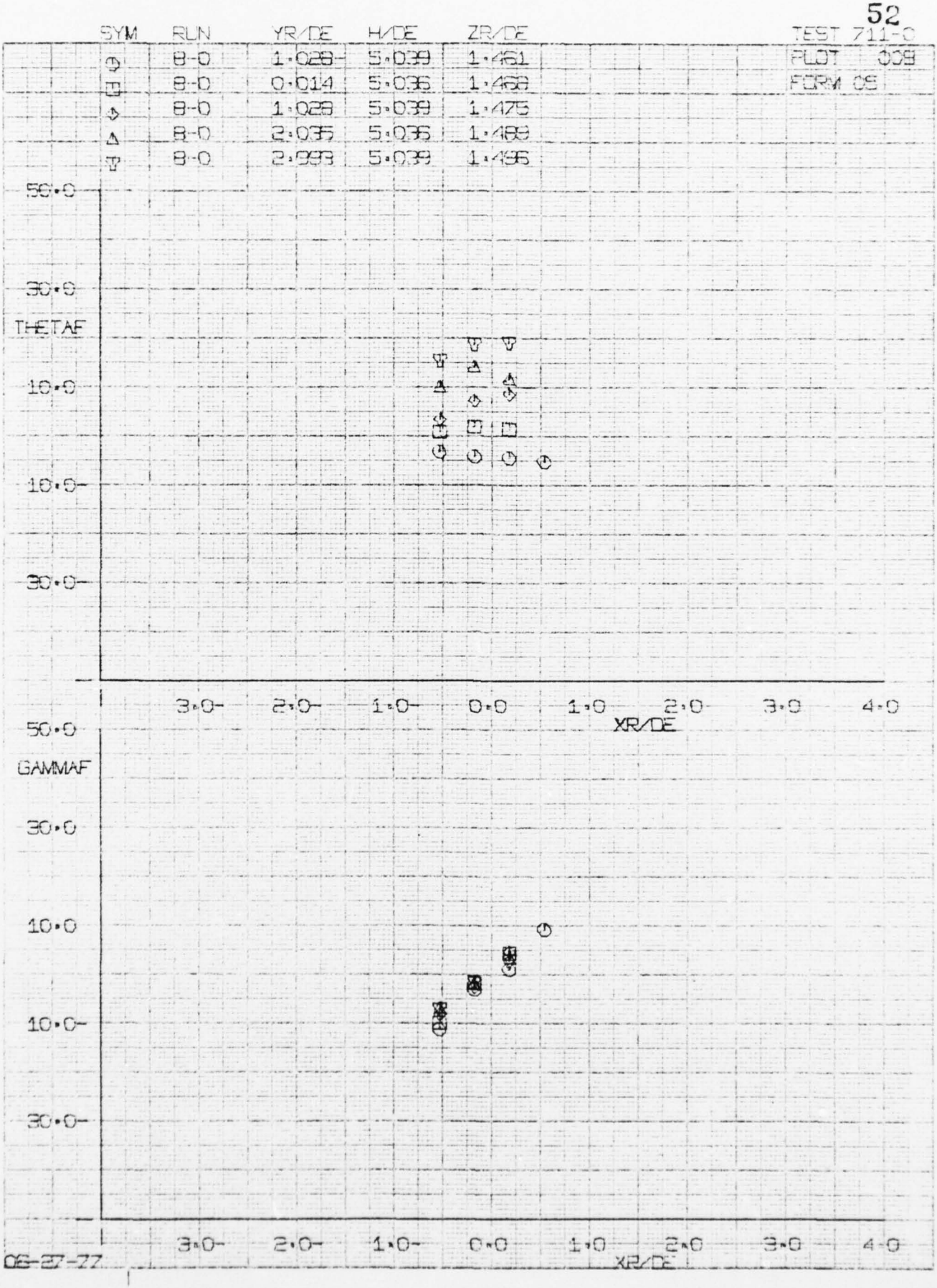
DATA PLOTS, IN RUN NUMBER ORDER

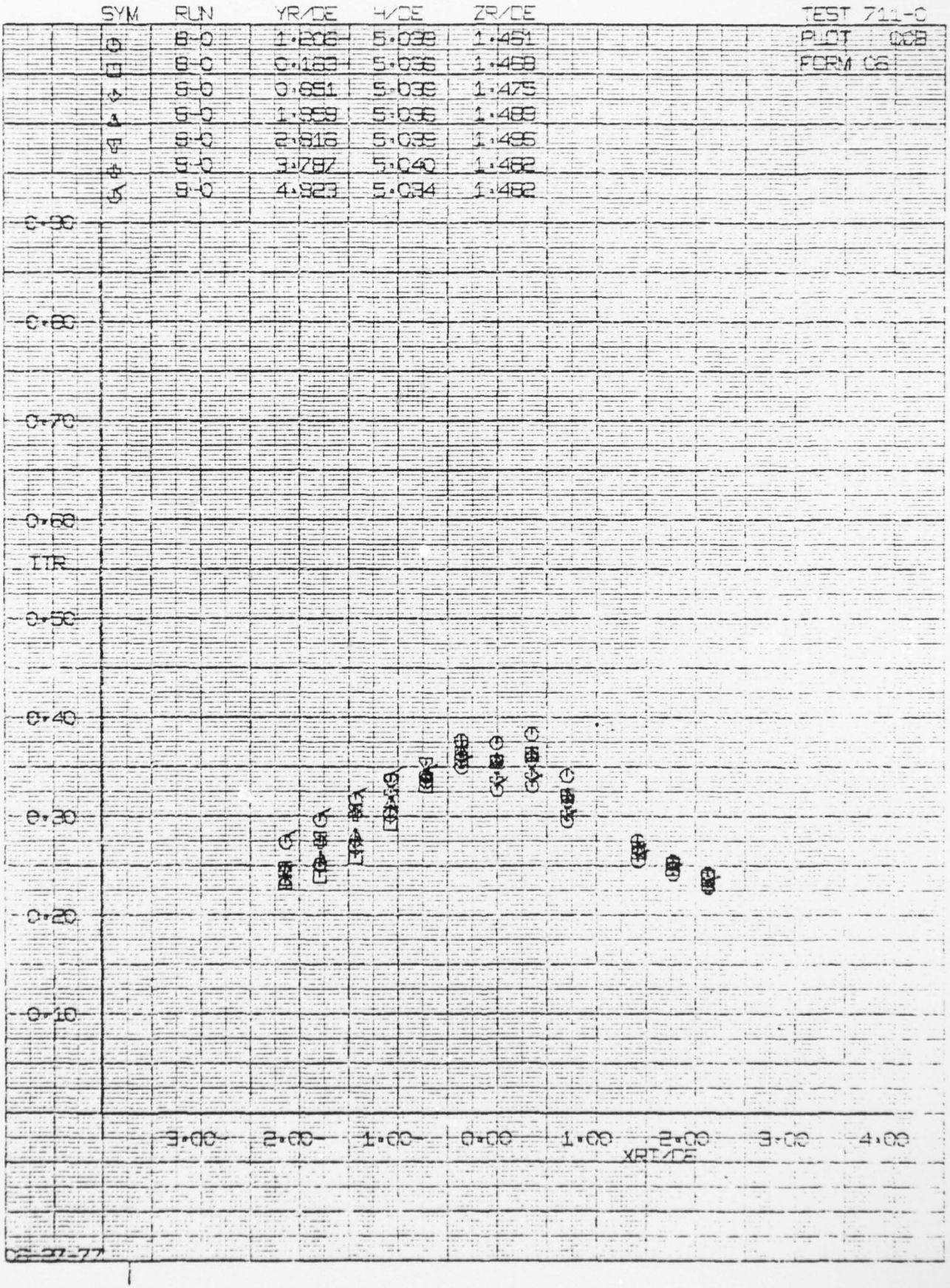

SYM RUN YR/DE H/DE ZR/DE
7-0 1.021 5.013 2.426
7-0 0.000 5.016 2.433
7-0 1.014 5.032 2.454
7-0 2.014 5.039 2.461
7-0 3.021 5.041 2.454
7-0 3.972 5.042 2.482
7-0 5.000 5.044 2.492
TEST 711-0
PLOT 007
FORM 04
MASF
LB SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
Q
FV
PSI
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
07-29-77


SYM RUN YR/DE H/DE ZR/DE
7-0 1.021 5.013 2.426
7-0 0.000 5.016 2.433
7-0 1.014 5.032 2.454
7-0 2.014 5.038 2.461
7-0 3.021 5.041 2.454
TEST 711-0
PLOT 007
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-27-77


SYM RUN YR/DE H/DE ZR/DE
7-0 1.199- 5.013 2.426
7-0 0.177- 5.016 2.433
7-0 0.937 5.032 2.454
7-0 1.837 5.039 2.461
7-0 2.844 5.041 2.454
7-0 3.794 5.042 2.452
7-0 4.923 5.044 2.452
TEST 711-0
PLOT 007
FORM 05
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00- 2.00- 1.00- 0.00 1.00 2.00 3.00 4.00
XRT/DE
05-27-77

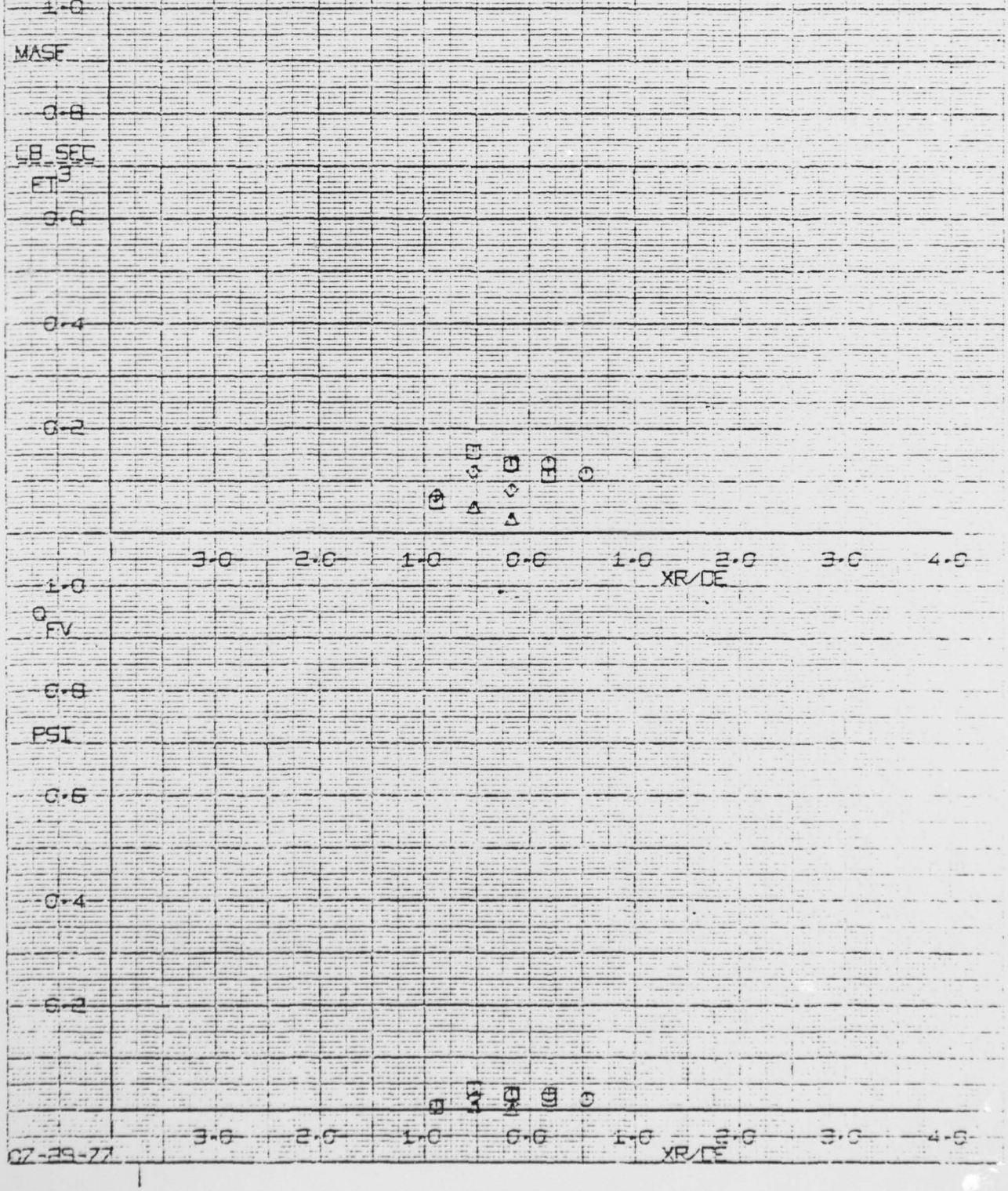

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 005
FORM 04
8-0 1.028 5.039 1.461
8-0 0.014 5.036 1.468
8-0 1.028 5.039 1.475
8-0 2.035 5.036 1.483
8-0 2.983 5.039 1.496
8-0 3.965 5.040 1.482
8-0 5.000 5.034 1.492
MASF
LB SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
Q
FV
PSI
07-29-77


SYM RUN YR/DE H/DE ZR/DE
8-0 1.028 5.039 1.461
8-0 0.014 5.036 1.468
8-0 1.028 5.039 1.475
8-0 2.035 5.036 1.489
8-0 2.993 5.039 1.496
TEST 711-C
PLOT 009
FORM 05
50.0
30.0
THETAF
10.0
10.0-
30.0-
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0-
30.0-
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77


SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 008
FORM 06
B-0 1.206 5.039 1.451
B-0 0.163 5.036 1.458
S-0 0.651 5.036 1.475
S-0 1.359 5.036 1.488
S-0 2.818 5.035 1.485
S-0 3.787 5.040 1.482
S-0 4.823 5.034 1.482
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE

SYM	RUN	YR/DE	H/DE	ZR/DE
⊕	9-0	1.021	5.038	3.745
⊞	9-0	0.021	5.032	3.773
◇	9-0	1.026	5.032	3.773
△	9-0	1.986	5.043	3.773
⊕	9-0	3.043	5.043	3.801

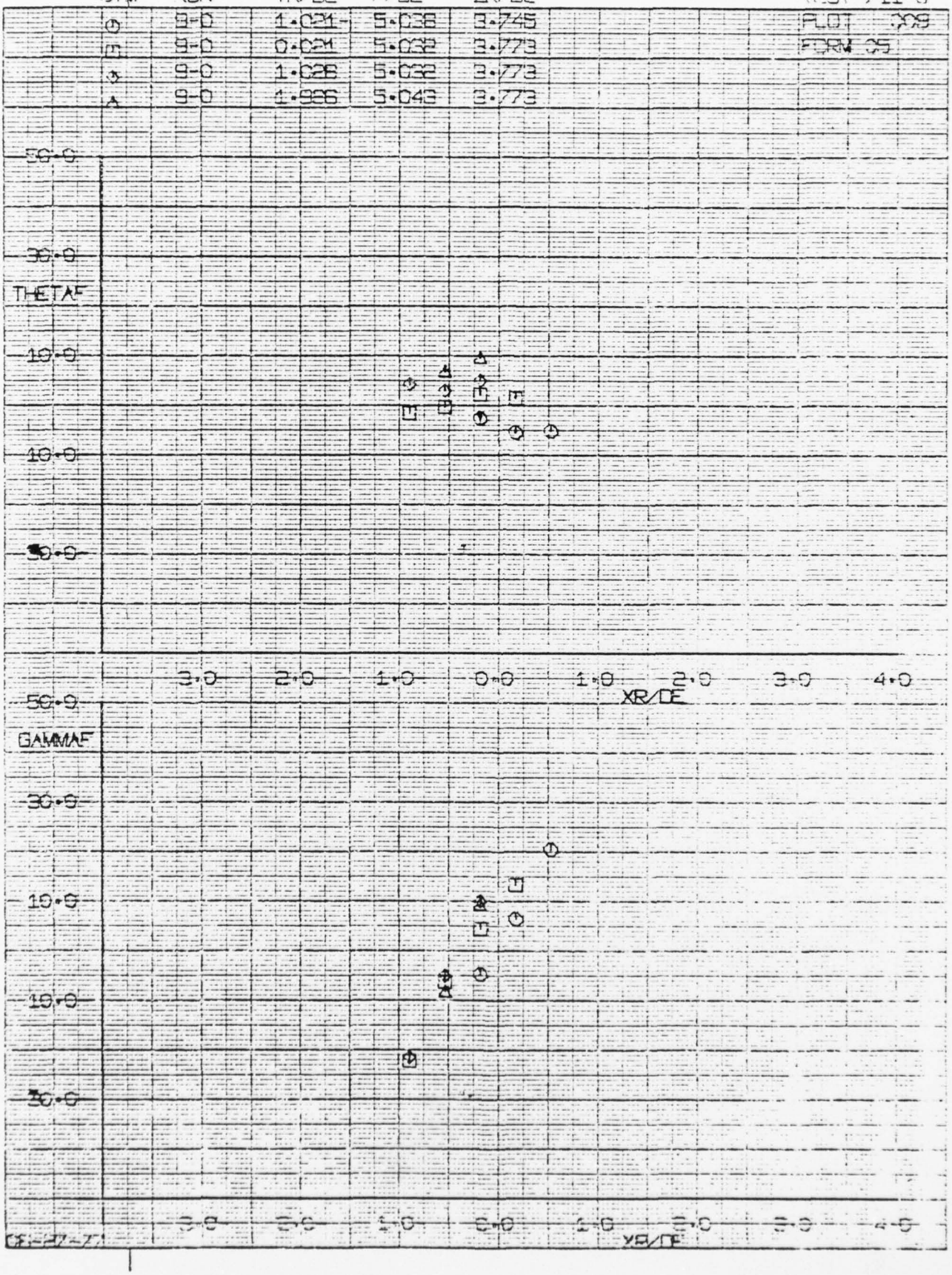
TEST 711-0
PLOT 003
FORM 04

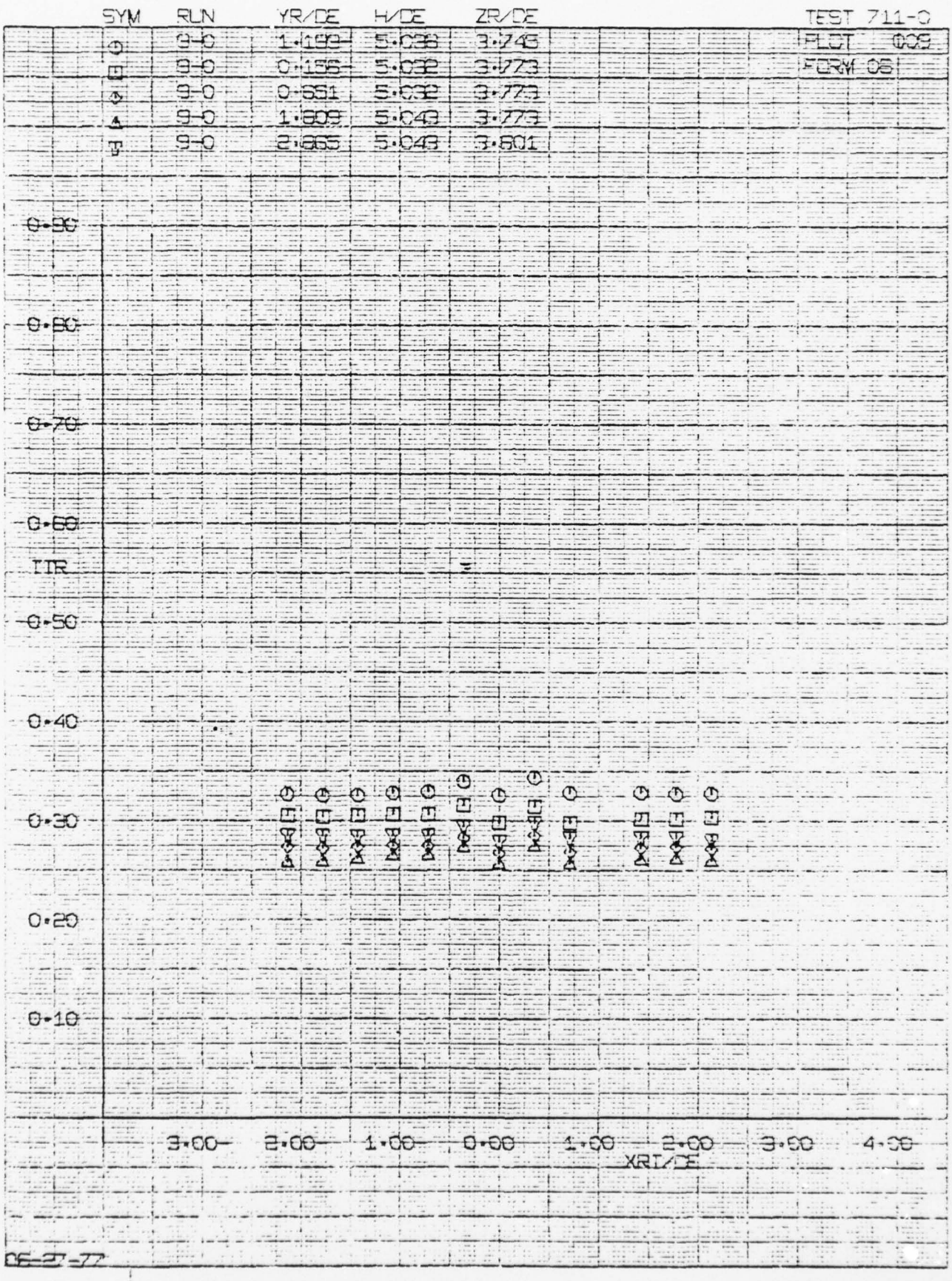


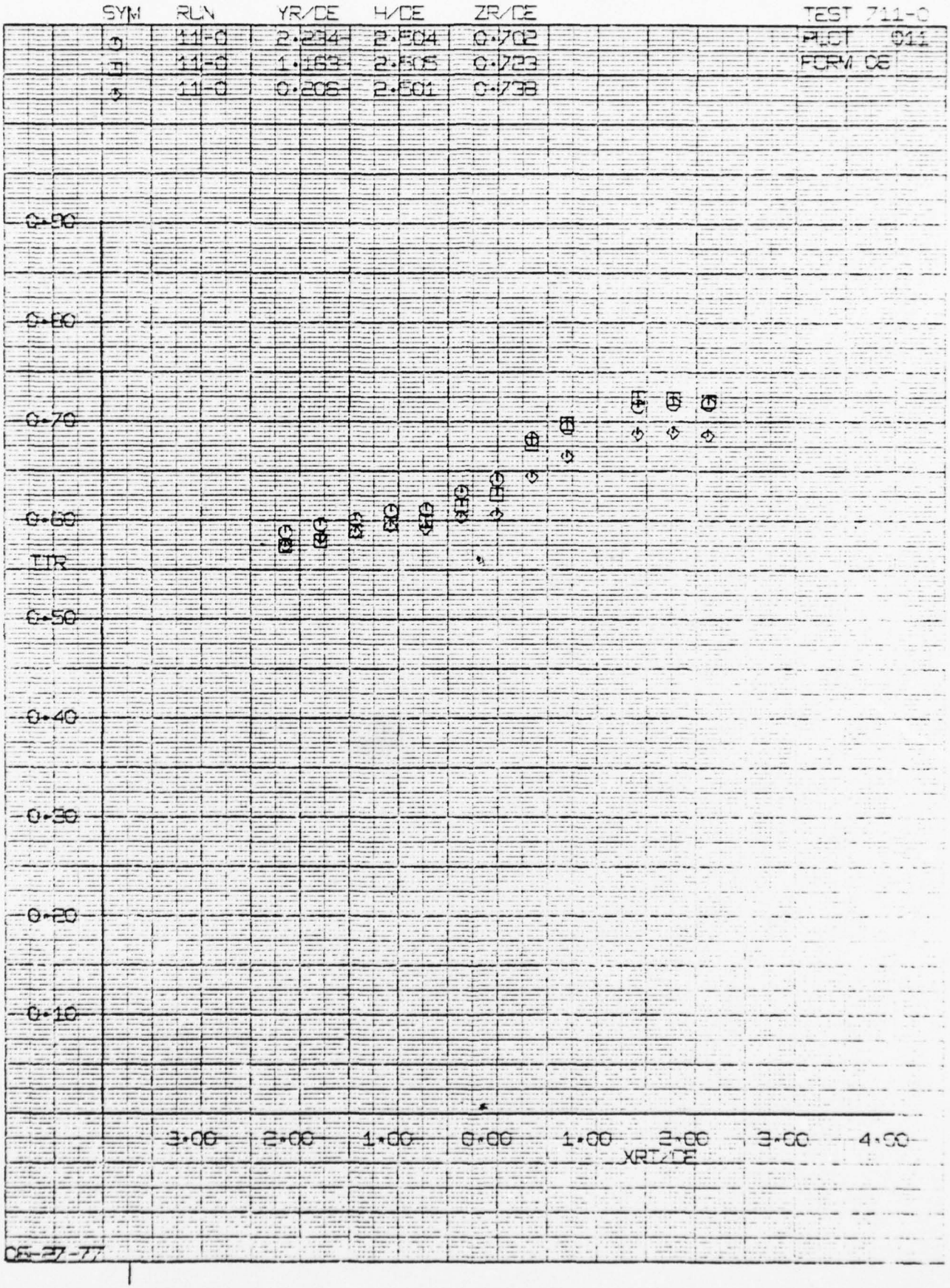
OZ-29-77

SYM	RUN	YR/DE	P/DE	ZR/DE
○	9-0	1.021	5.038	3.745
□	9-0	0.021	5.032	3.773
◇	9-0	1.028	5.032	3.773
△	9-0	1.986	5.043	3.773

TEST 711-0
PLOT 009
FORM 05

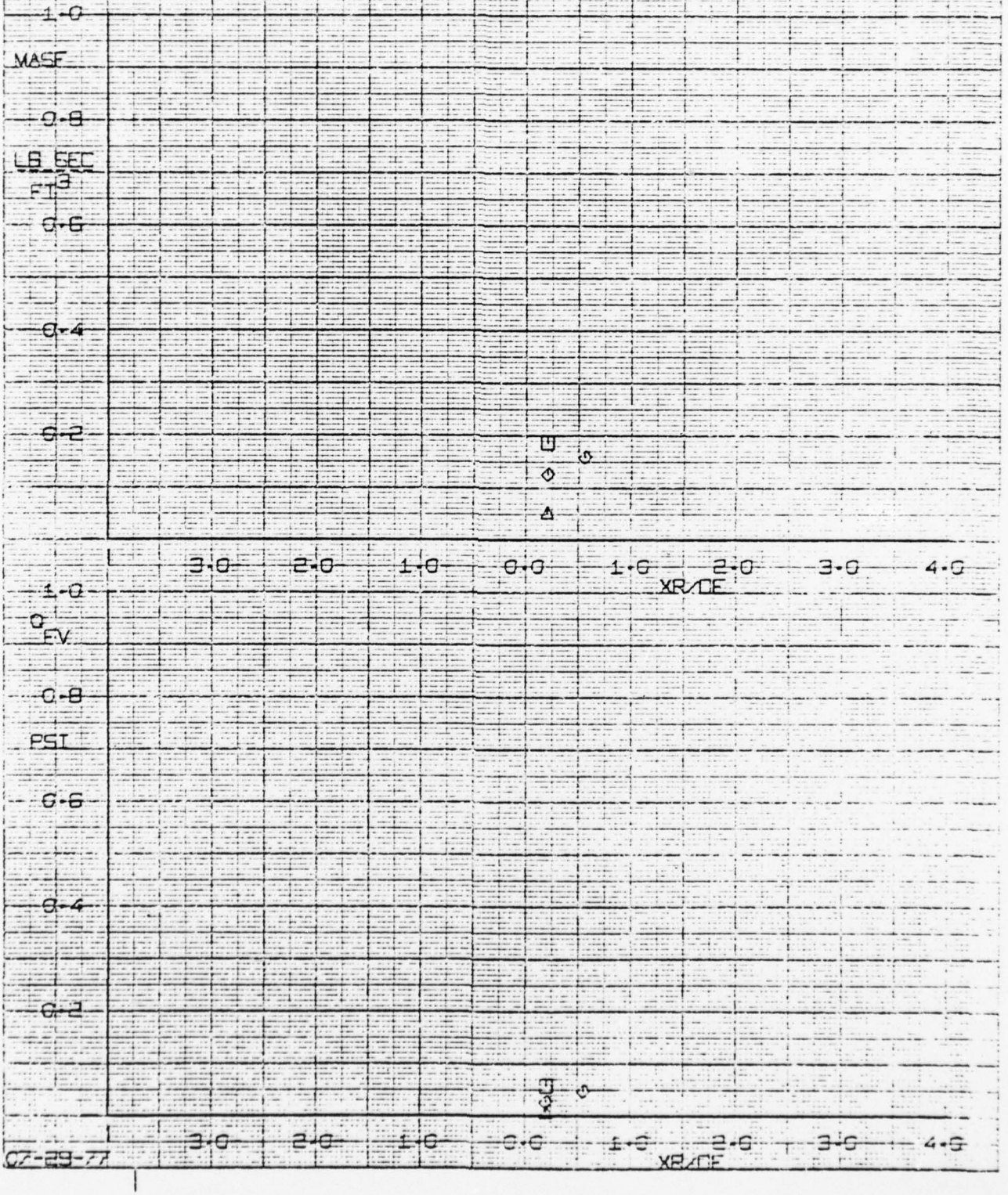



SYM RLN YR/DE H/DE ZR/DE
9-0 1.199 5.038 3.745
9-0 0.155 5.032 3.773
9-0 0.651 5.032 3.773
9-0 1.809 5.043 3.773
9-0 2.865 5.043 3.801
TEST 711-0
PLOT 003
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRI/DE
06-27-77

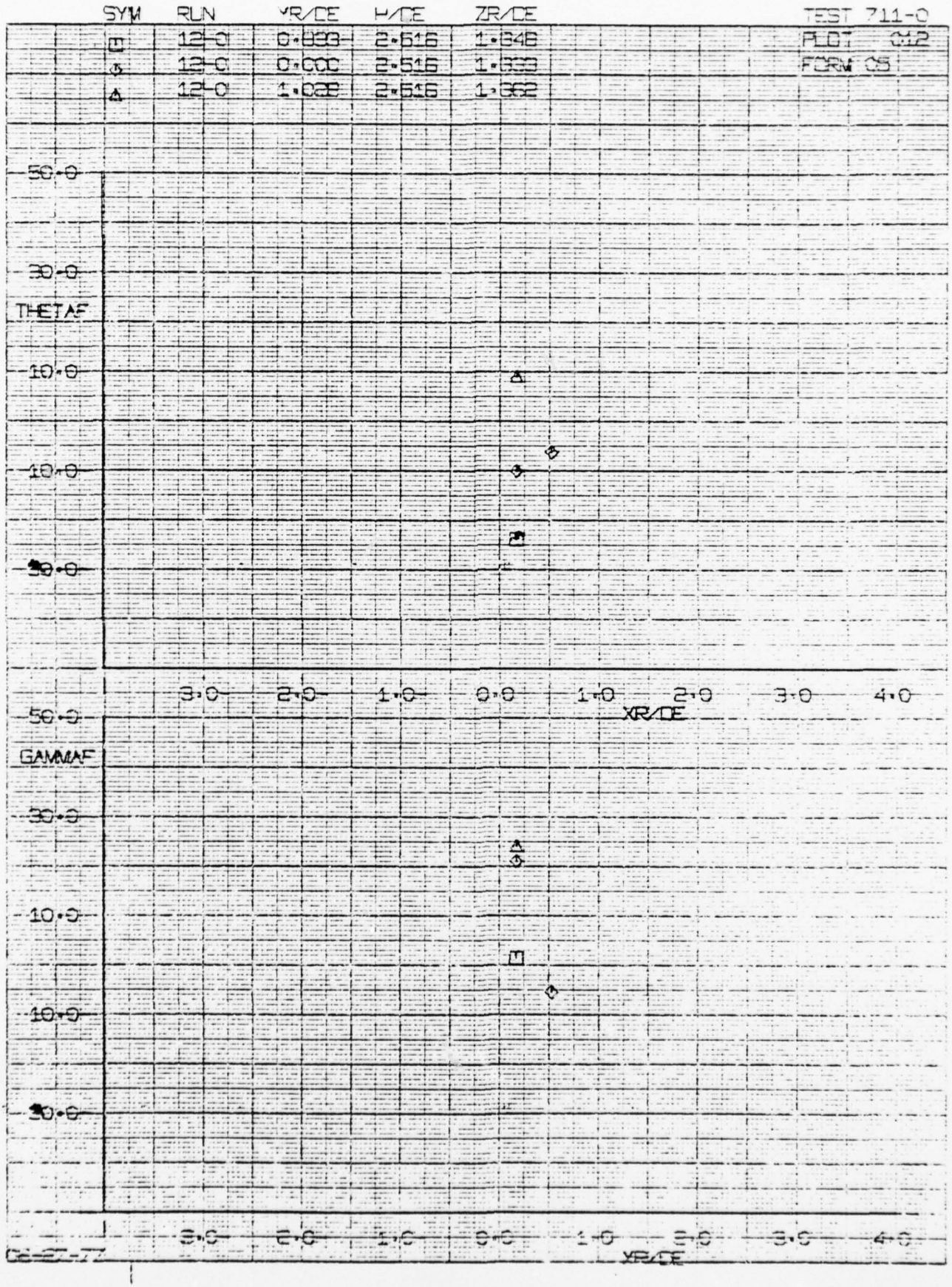

SYM RUN YR/DE H/DE ZR/DE
11-0 2.234 2.504 0.702
11-0 1.163 2.505 0.723
11-0 0.208 2.501 0.738
TEST 711-0
PLOT 011
FORM DE
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
05-27-77

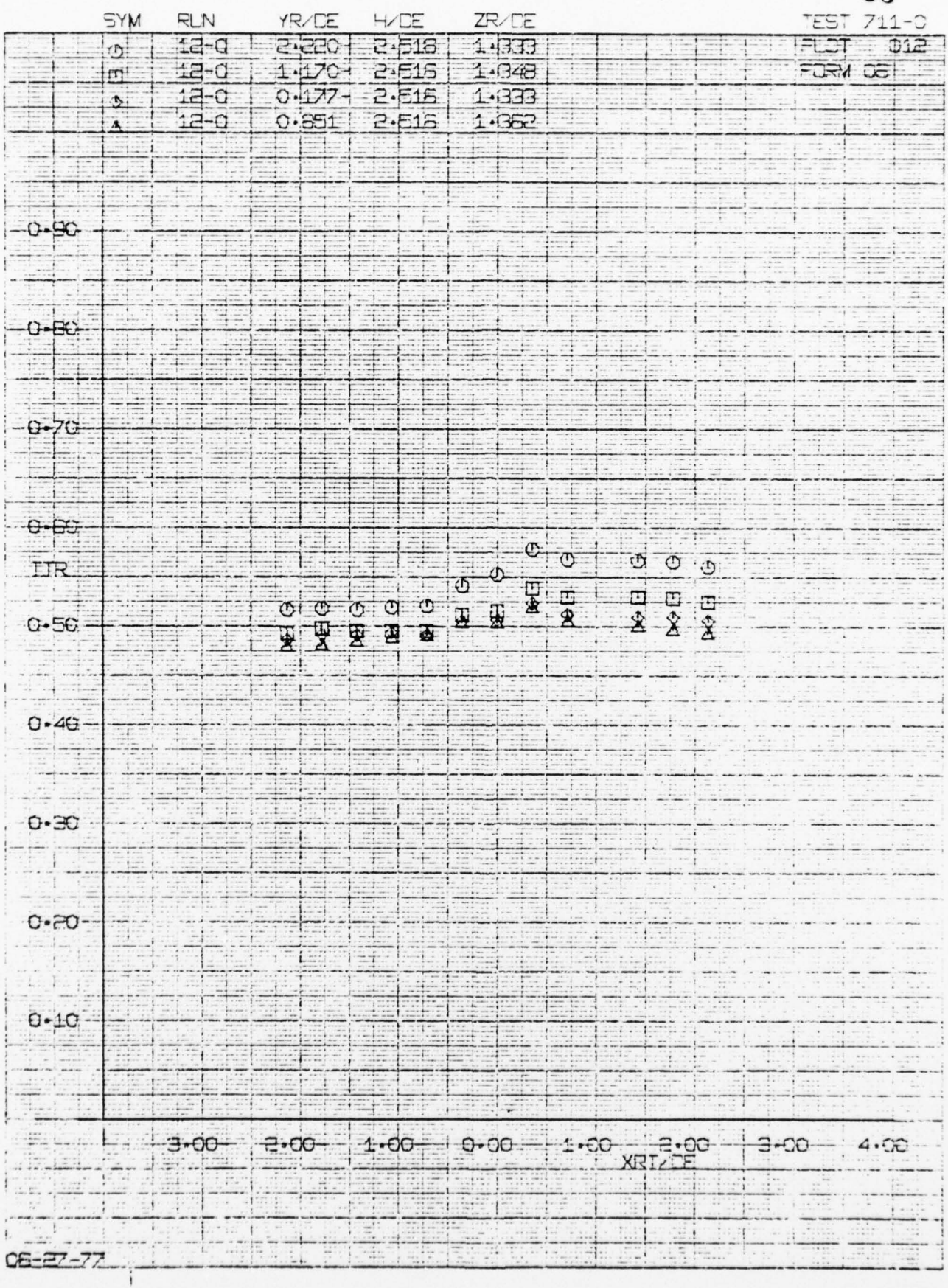
SYM	RUN	YR/DE	H/DE	ZR/DE
□	12-0	2.043	2.516	1.333
◇	12-0	0.333	2.516	1.348
○	12-0	0.000	2.516	1.333
△	12-0	1.028	2.516	1.362

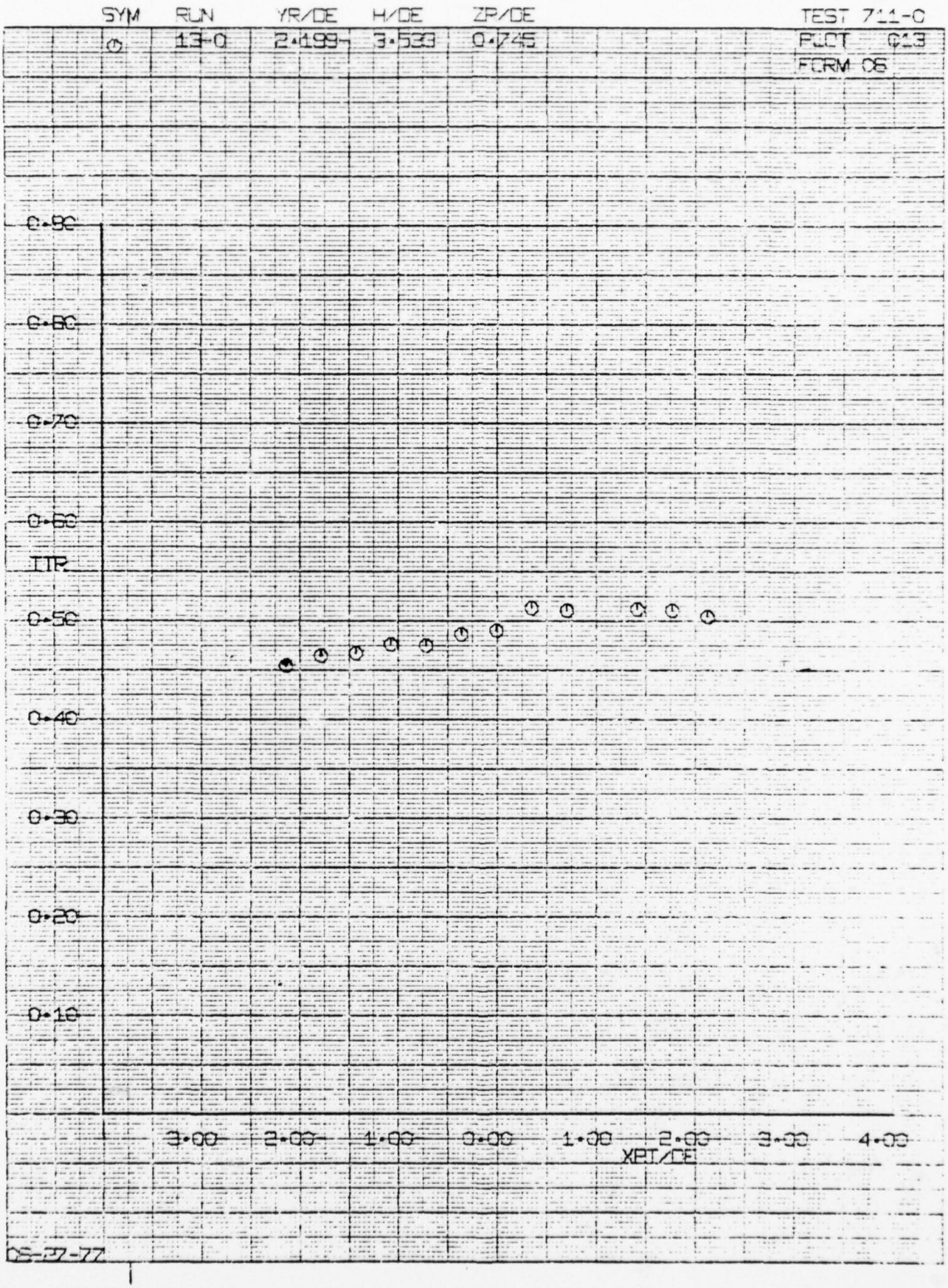
TEST 711-0
PLOT 012
FORM 04



07-29-77

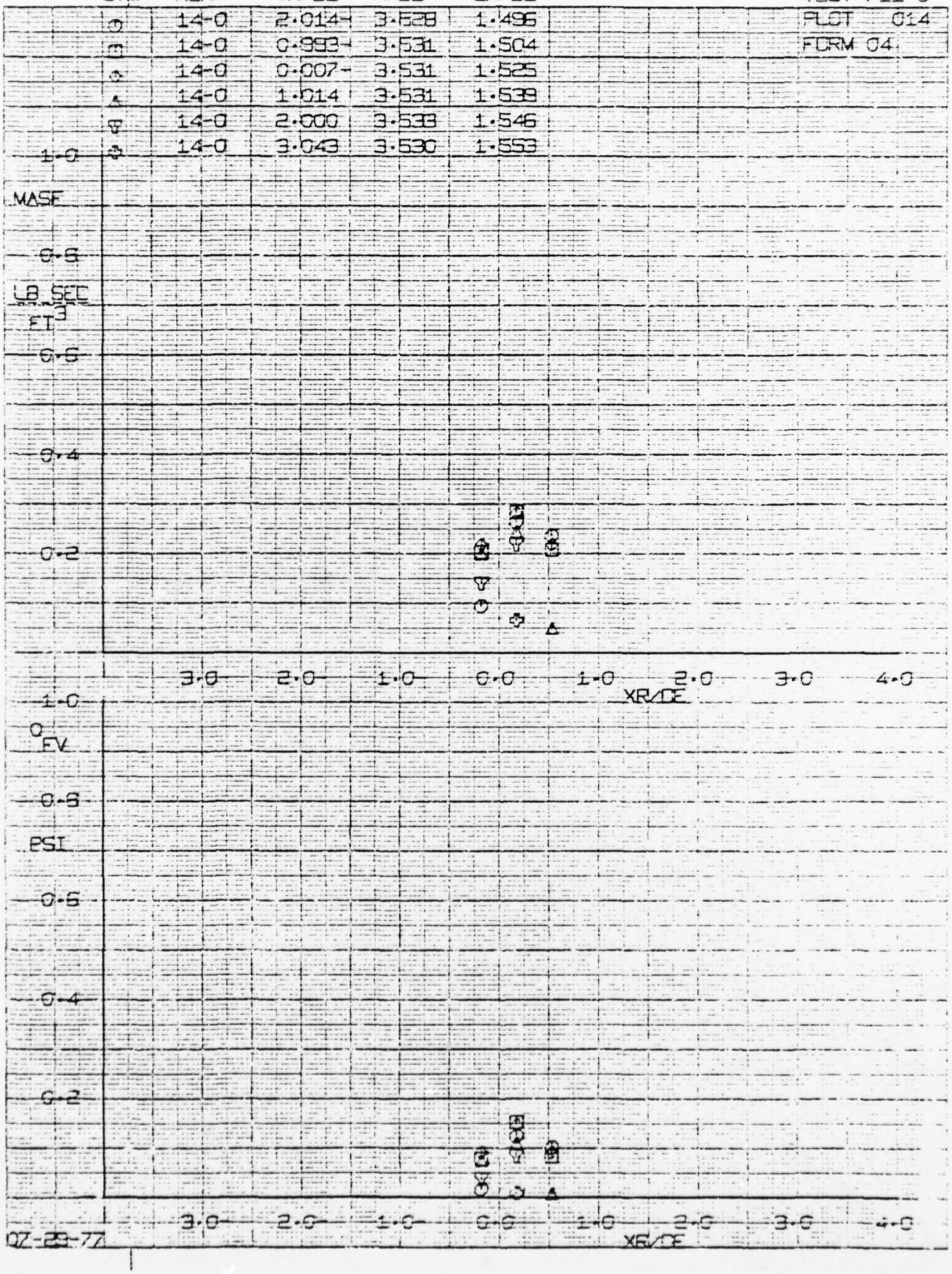

SYM RUN XR/DE H/DE ZR/DE
12-0 0.883 2.516 1.348
12-0 0.000 2.516 1.333
12-0 1.022 2.516 1.362
TEST 711-0
PLOT 012
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE

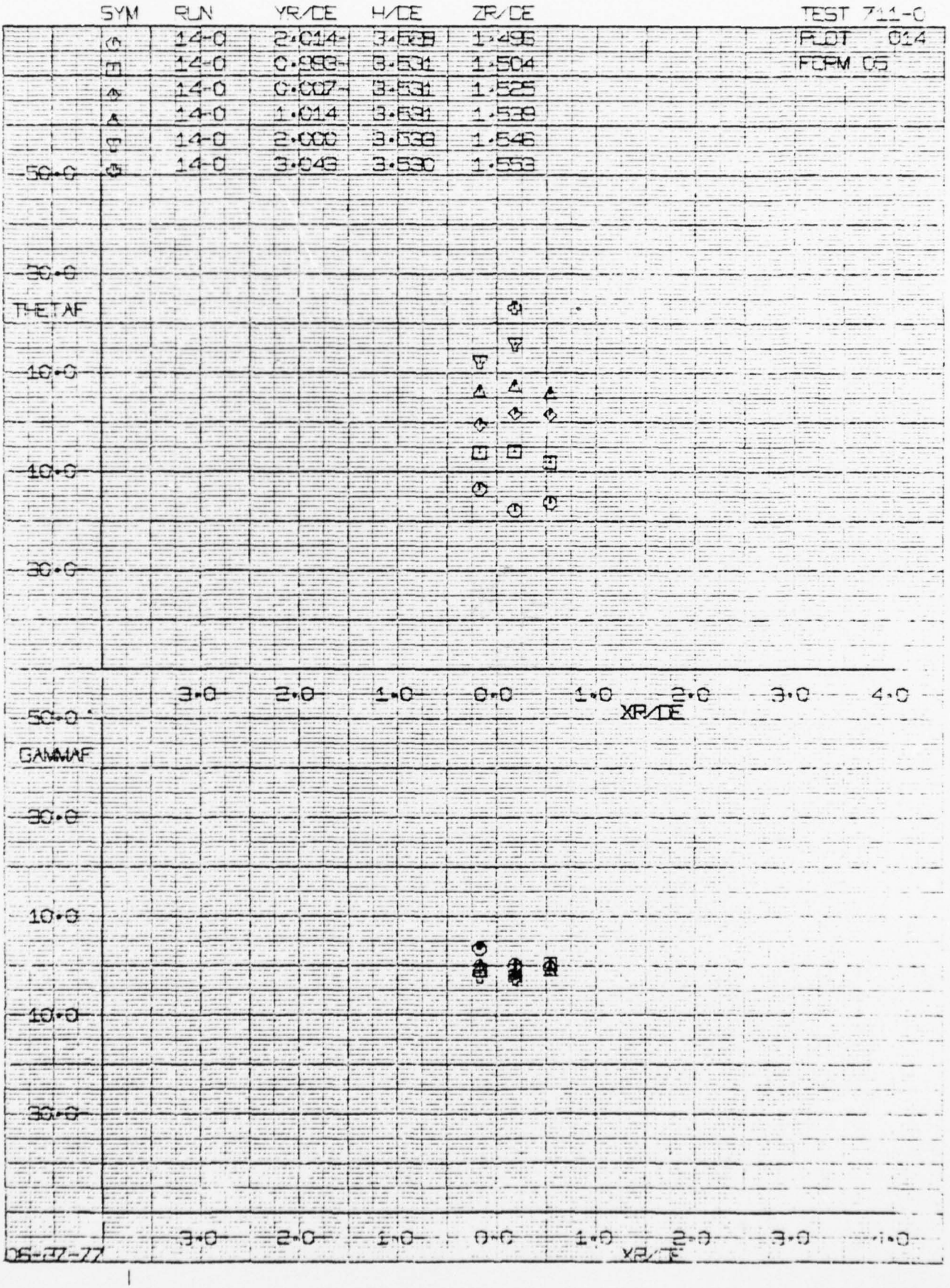

SYM RUN YR/DE H/DE ZR/DE
12-0 2.220 2.518 1.333
12-0 1.170 2.516 1.048
12-0 0.177 2.516 1.333
12-0 0.851 2.516 1.062
TEST 711-0
PLOT 012
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-27-77

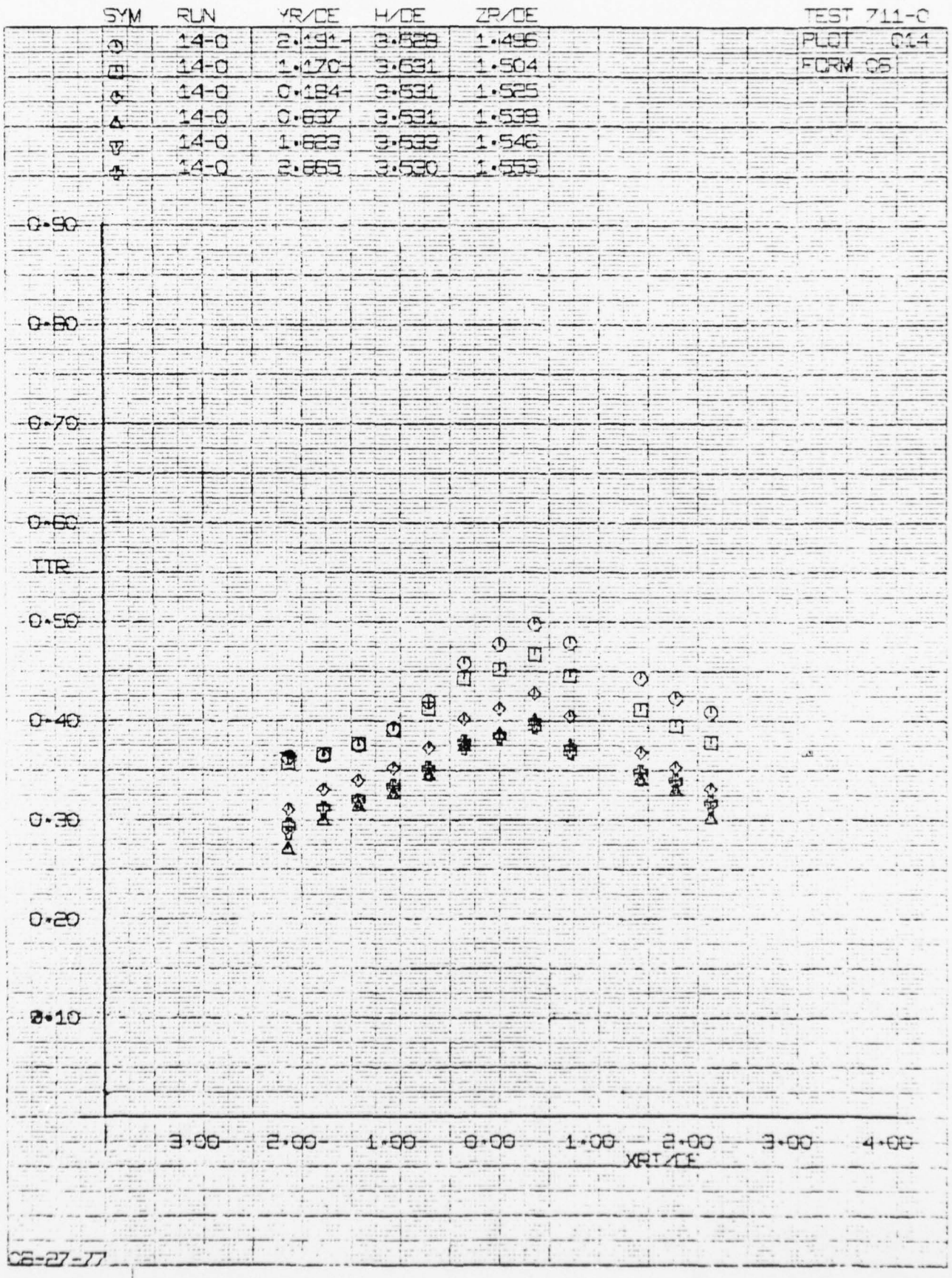

SYM
RUN
YR/DE
H/DE
ZP/DE
TEST 711-C
13-0
2.199
3.533
0.745
PLOT 013
FORM 06
0.80
0.60
0.70
0.60
ITP
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XPT/DE
05-27-77

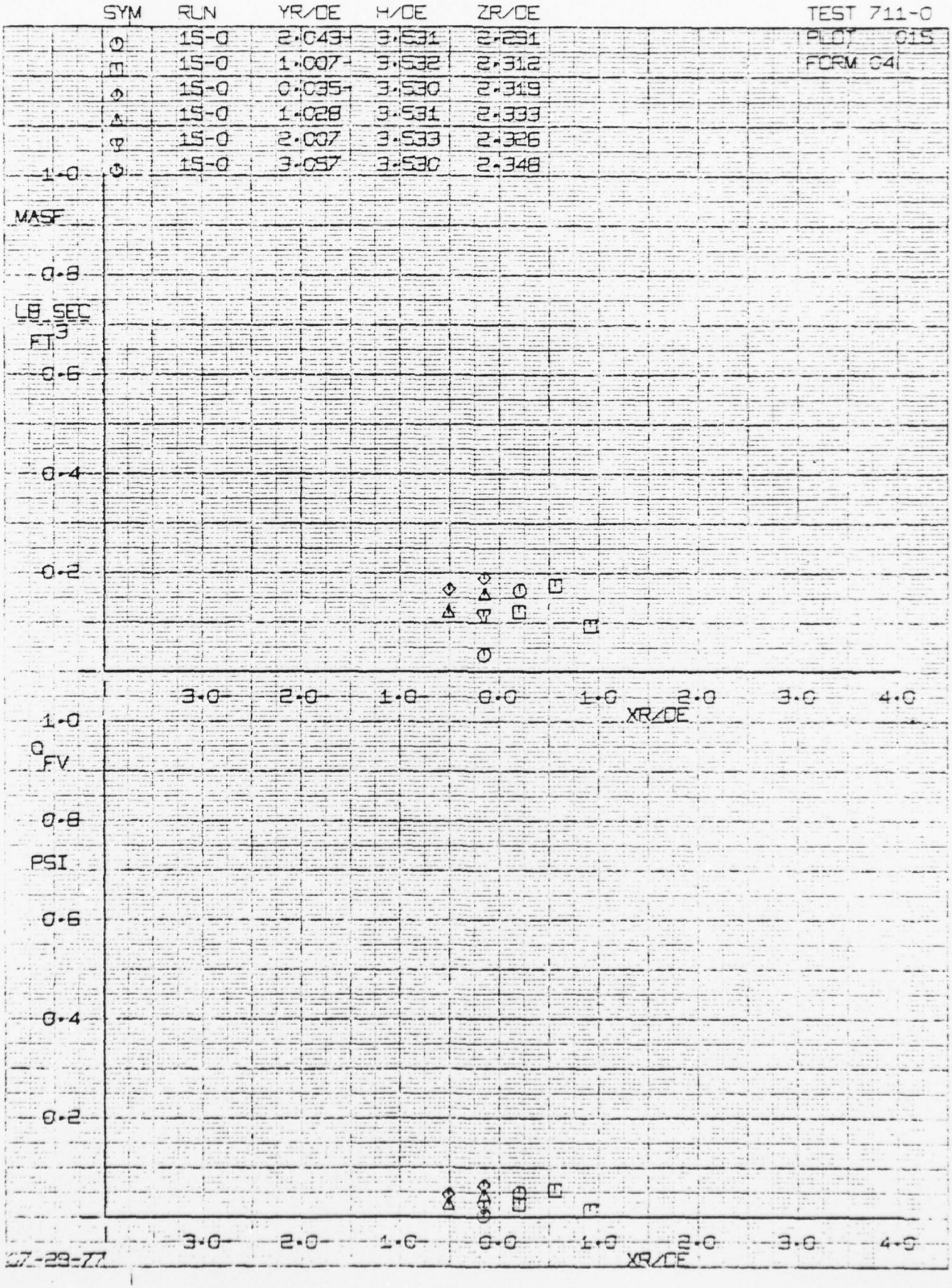
SYM	RUN	YR/DE	H/DE	ZR/DE
○	14-0	2.014	3.528	1.496
□	14-0	0.993	3.531	1.504
◇	14-0	0.007	3.531	1.525
△	14-0	1.014	3.531	1.538
▽	14-0	2.000	3.533	1.546
◁	14-0	3.043	3.530	1.553

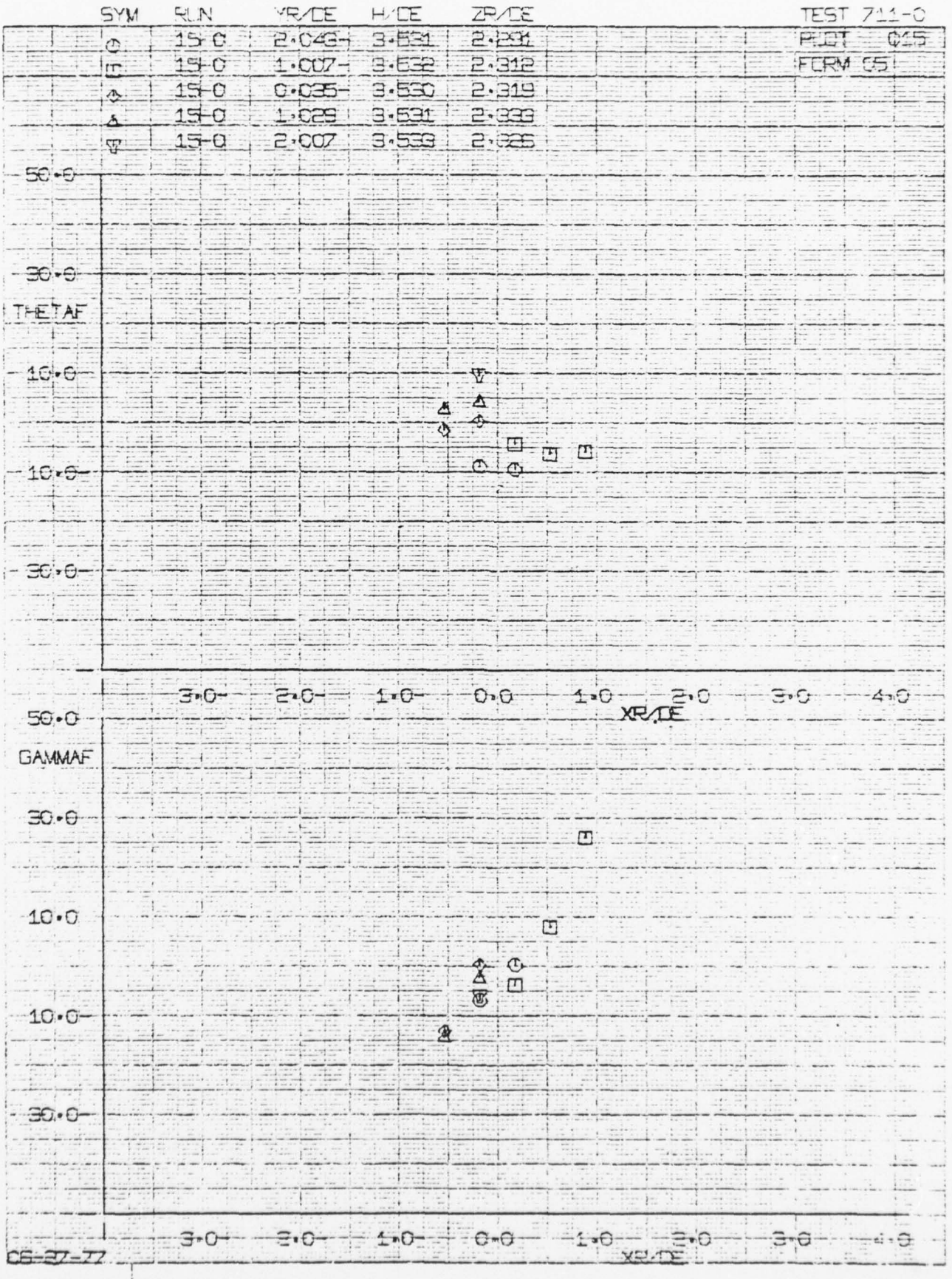
TEST 711-0
PLOT 014
FORM 04

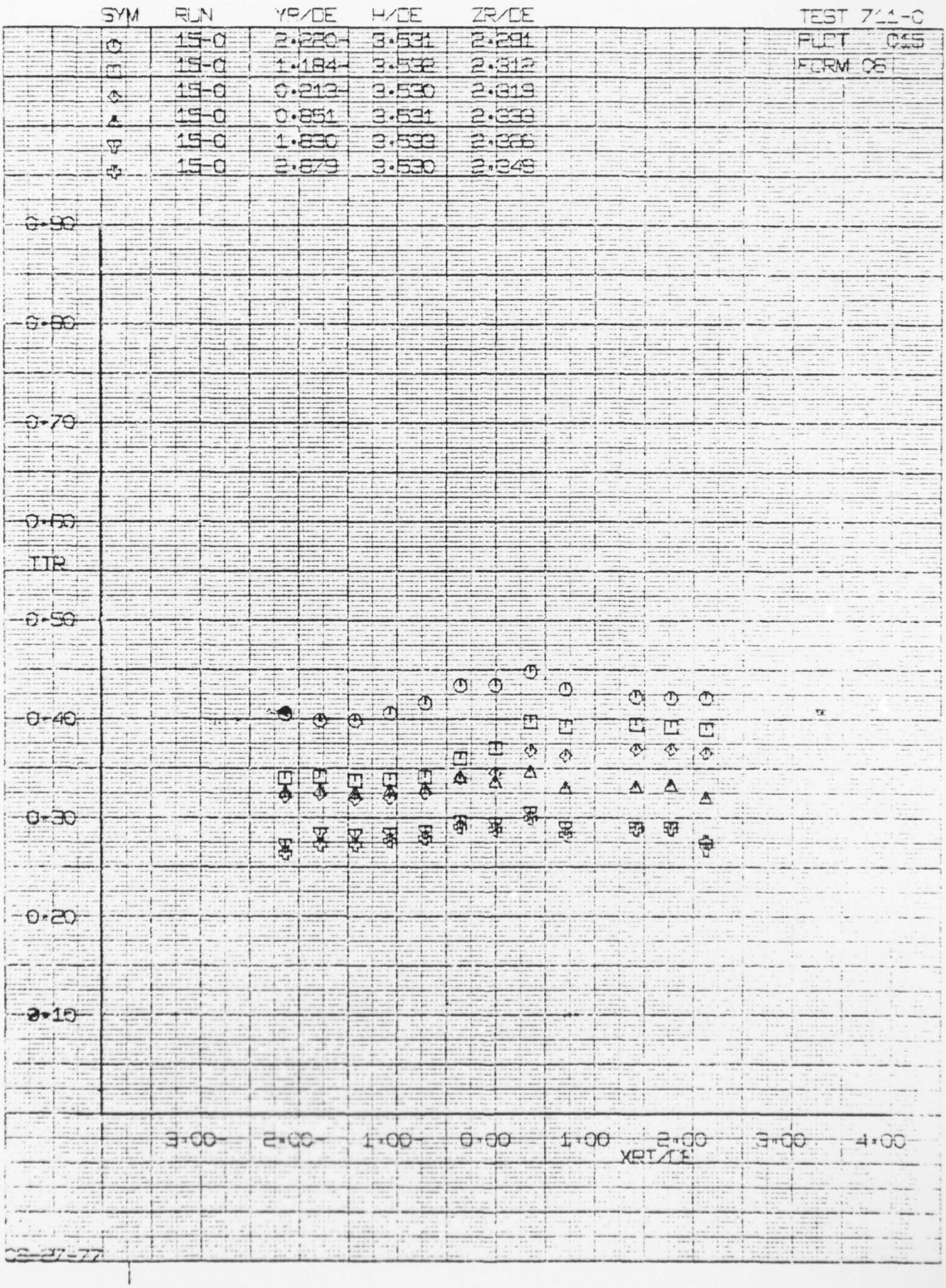



SYM RUN YR/DE H/DE ZR/DE
14-0 2.014 3.538 1.496
14-0 0.983 3.531 1.504
14-0 0.007 3.531 1.525
14-0 1.014 3.531 1.538
14-0 2.000 3.538 1.546
14-0 3.043 3.530 1.553
TEST 711-0
PLOT 014
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77


SYM RUN YR/DE H/DE ZP/DE
14-0 2.191- 3.528 1.496
14-0 1.170- 3.631 1.504
14-0 0.184- 3.531 1.525
14-0 0.637 3.531 1.539
14-0 1.623 3.533 1.546
14-0 2.665 3.530 1.553
TEST 711-C
PLOT 014
FORM 05
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-27-77

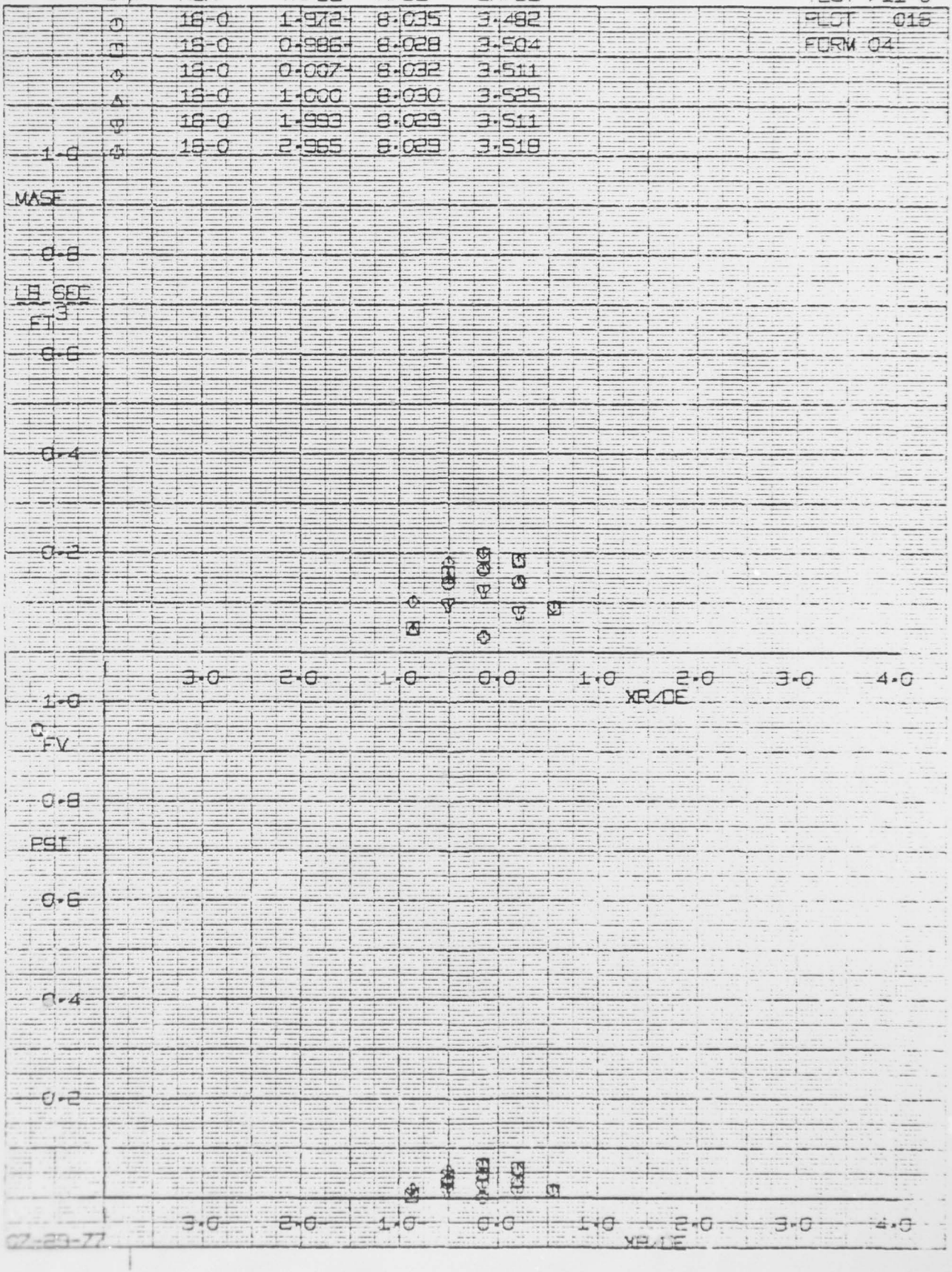

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 015
FORM 04
15-0 2.043 3.531 2.291
15-0 1.007 3.532 2.312
15-0 0.035 3.530 2.319
15-0 1.028 3.531 2.333
15-0 2.007 3.533 2.326
15-0 3.057 3.530 2.348
MASF
LB SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
Q
FV
PSI
07-29-77


SYM RUN XR/DE H/DE ZP/DE
15-0 2.046- 3.531 2.291
15-0 1.007- 3.532 2.312
15-0 0.035- 3.530 2.319
15-0 1.029 3.531 2.339
15-0 2.007 3.539 2.326
TEST 711-0
PLOT 015
FORM 55
50.0
30.0
THETAF
10.0
10.0-
30.0-
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0-
30.0-
06-27-77

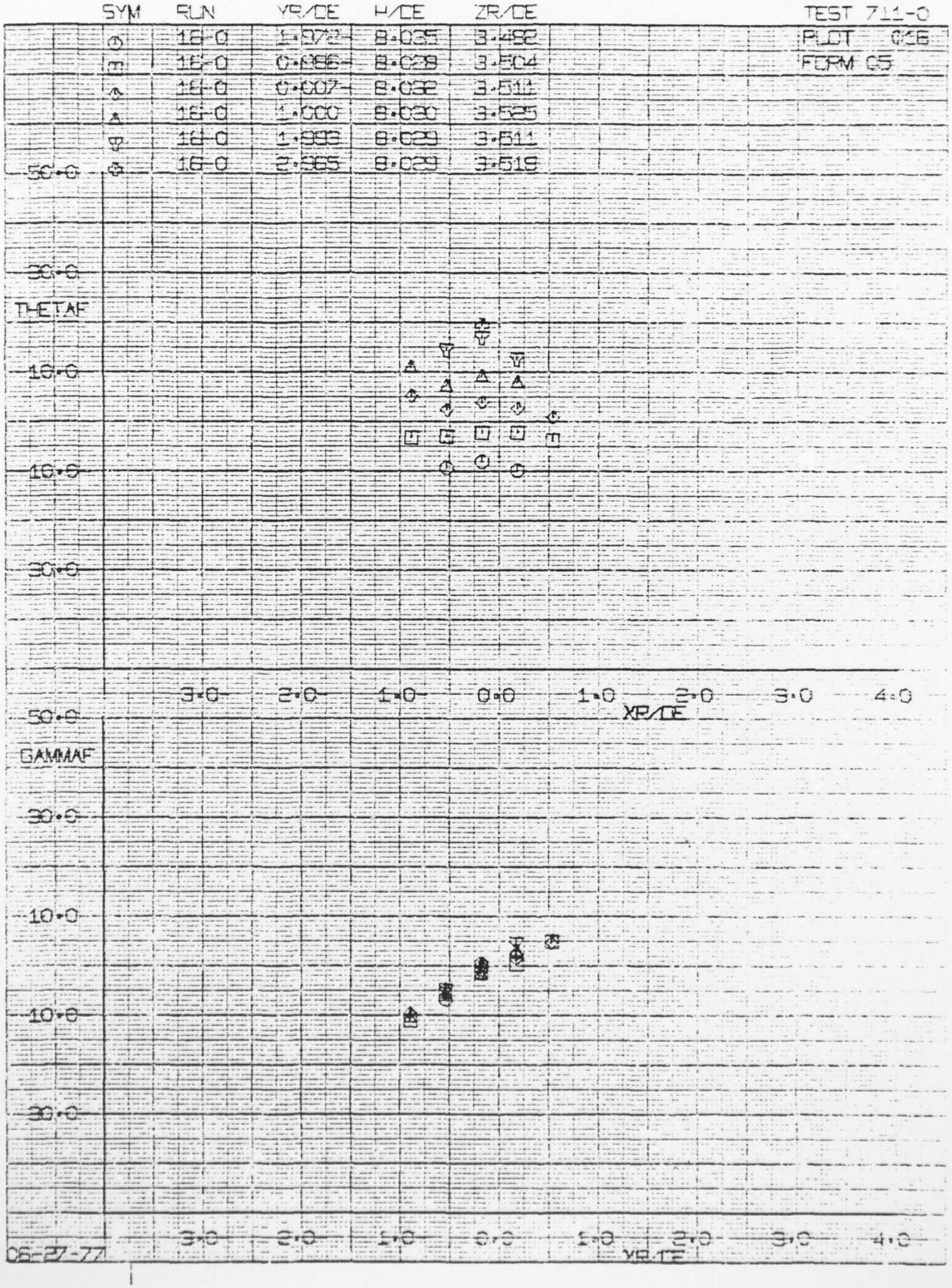

SYM RUN YP/DE H/DE ZR/DE
15-0 2.220- 3.531 2.291
15-0 1.184- 3.532 2.312
15-0 0.213- 3.530 2.319
15-0 0.851 3.531 2.333
15-0 1.830 3.533 2.336
15-0 2.679 3.530 2.348
TEST 711-0
PLOT 015
FORM 06
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
3.00- 2.00- 1.00- 0.00 1.00 2.00 3.00 4.00
XRT/E
08-27-77

SYM	RUN	YR/DE	H/DE	ZR/DE
○	16-0	1.972	8.035	3.482
□	16-0	0.986	8.028	3.504
◇	16-0	0.007	8.032	3.511
△	16-0	1.000	8.030	3.525
▽	16-0	1.993	8.029	3.511
⊕	16-0	2.965	8.029	3.518

TEST 711-0
PLOT 015
FORM 04

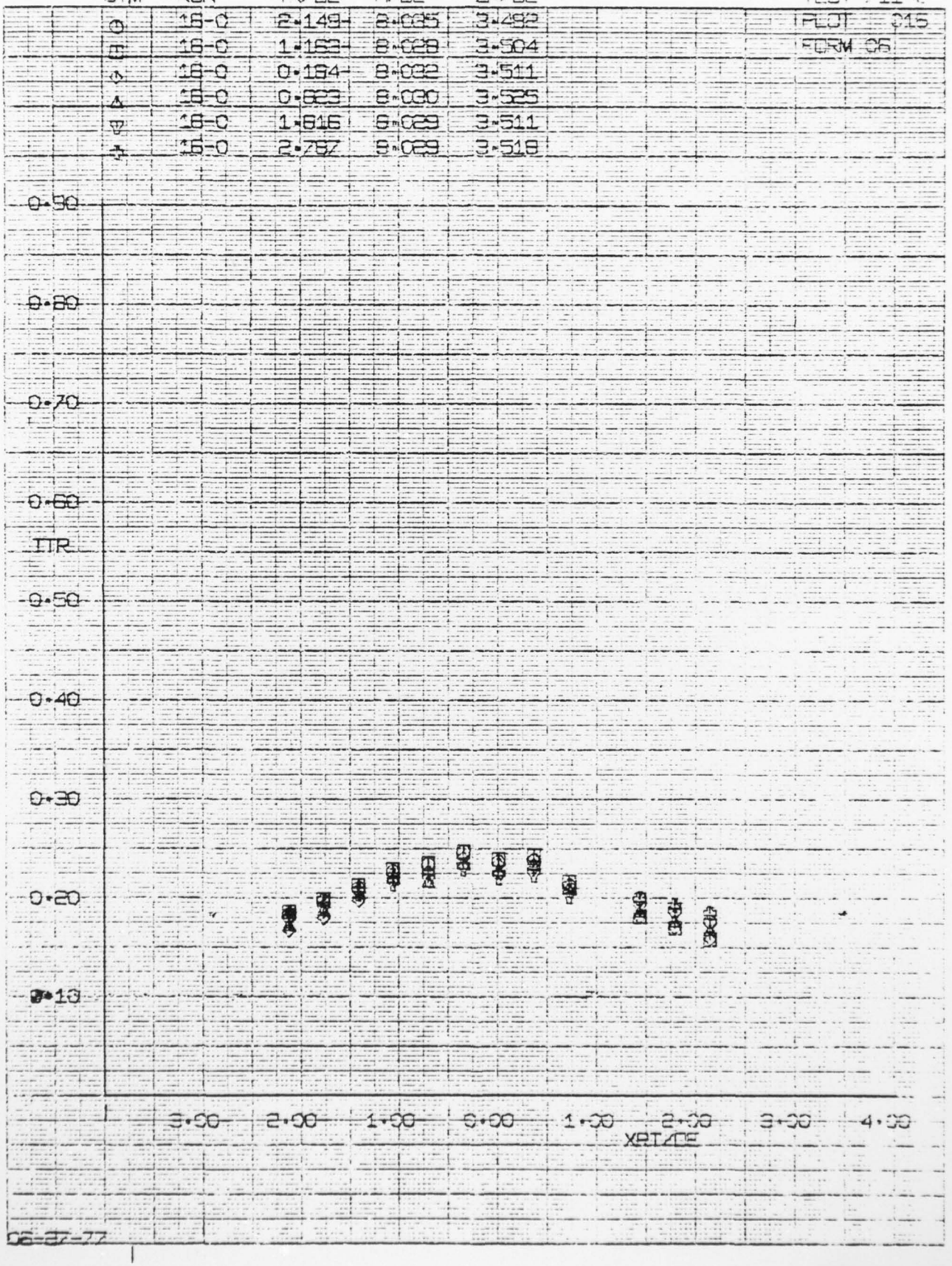


02-23-77


SYM RUN YR/CE H/CE ZR/CE
16-0 1.972 8.035 3.492
16-0 0.986 8.028 3.504
16-0 0.007 8.032 3.511
16-0 1.000 8.030 3.525
16-0 1.993 8.029 3.511
16-0 2.965 8.029 3.519
TEST 711-0
PLOT 016
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XP/CE
50.0
GAMMAF
30.0
10.0
10.0
30.0
06-27-77
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
YP/CE

SYM	RUN	YR/DE	H/DE	ZP/DE
⊙	16-0	2.149	8.035	3.492
□	16-0	1.153	8.028	3.504
◇	16-0	0.184	8.032	3.511
△	16-0	0.823	8.030	3.525
▽	16-0	1.816	8.029	3.511
☆	16-0	2.787	8.029	3.518

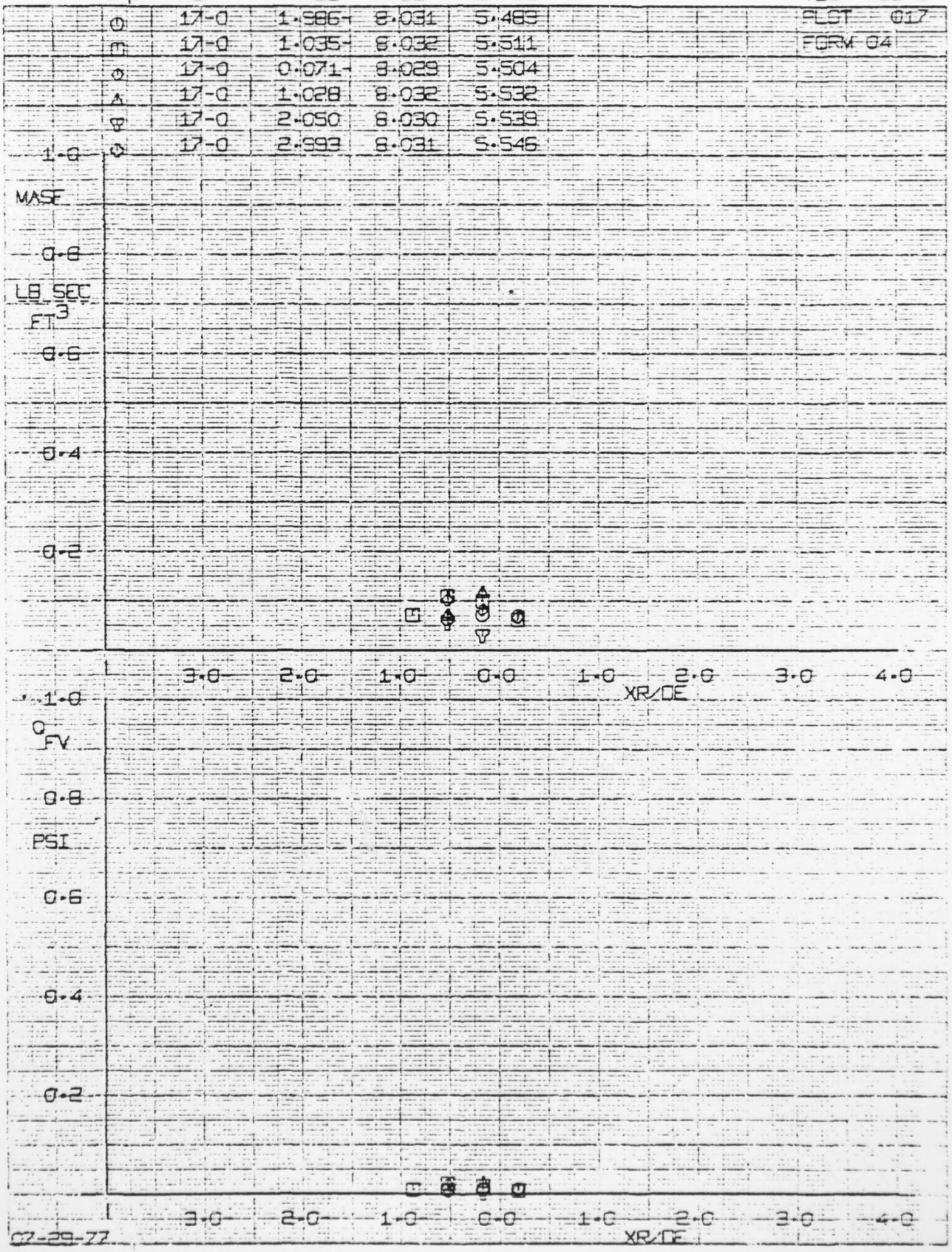
TEST 711-C
PLOT 015
FORM 06

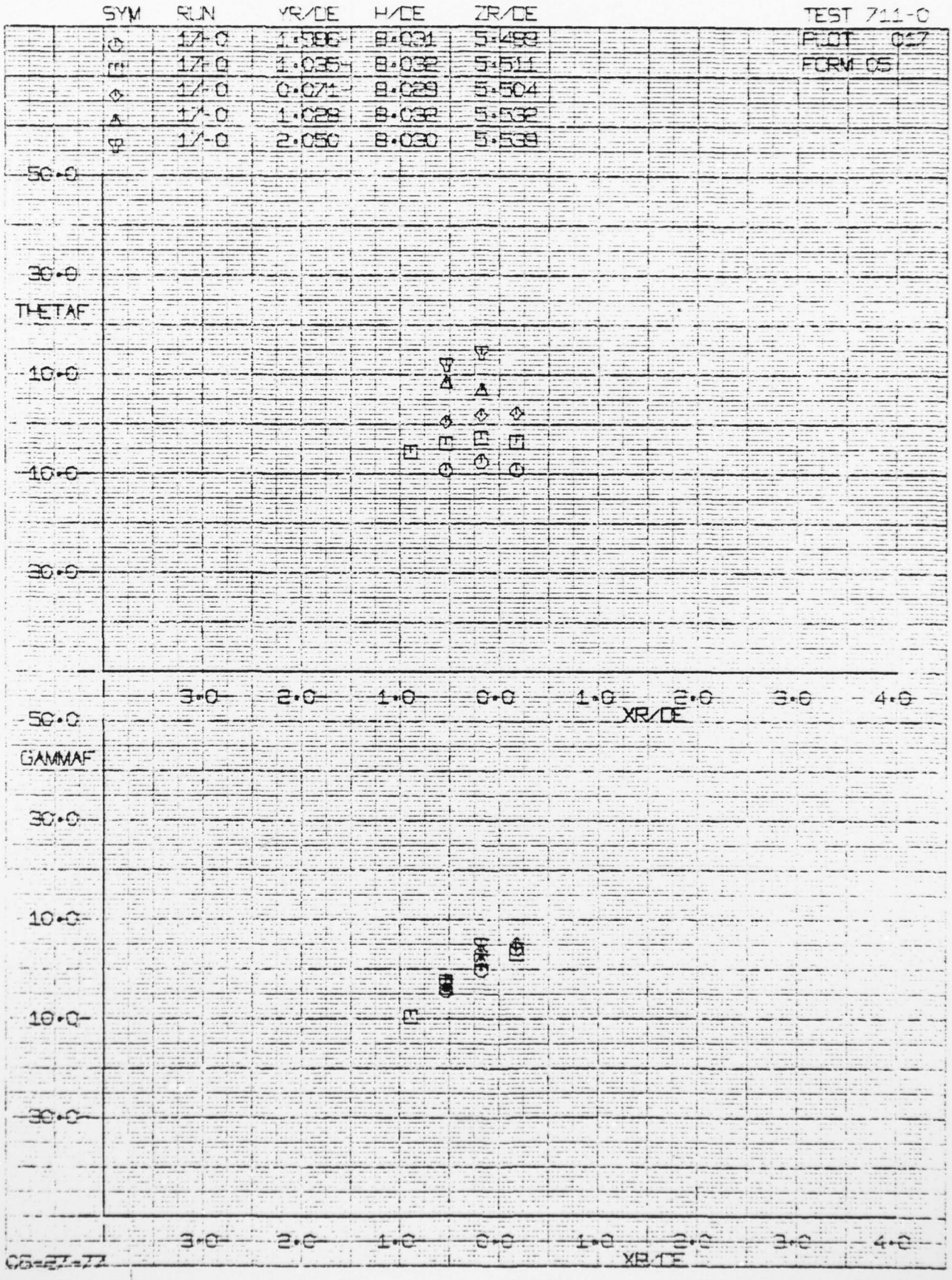


06-27-77

SYM	RUN	YR/DE	H/DE	ZR/DE
○	17-0	1.986	8.031	5.483
□	17-0	1.035	8.032	5.511
◇	17-0	0.071	8.029	5.504
△	17-0	1.028	8.032	5.532
▽	17-0	2.050	8.030	5.539
◁	17-0	2.993	8.031	5.546

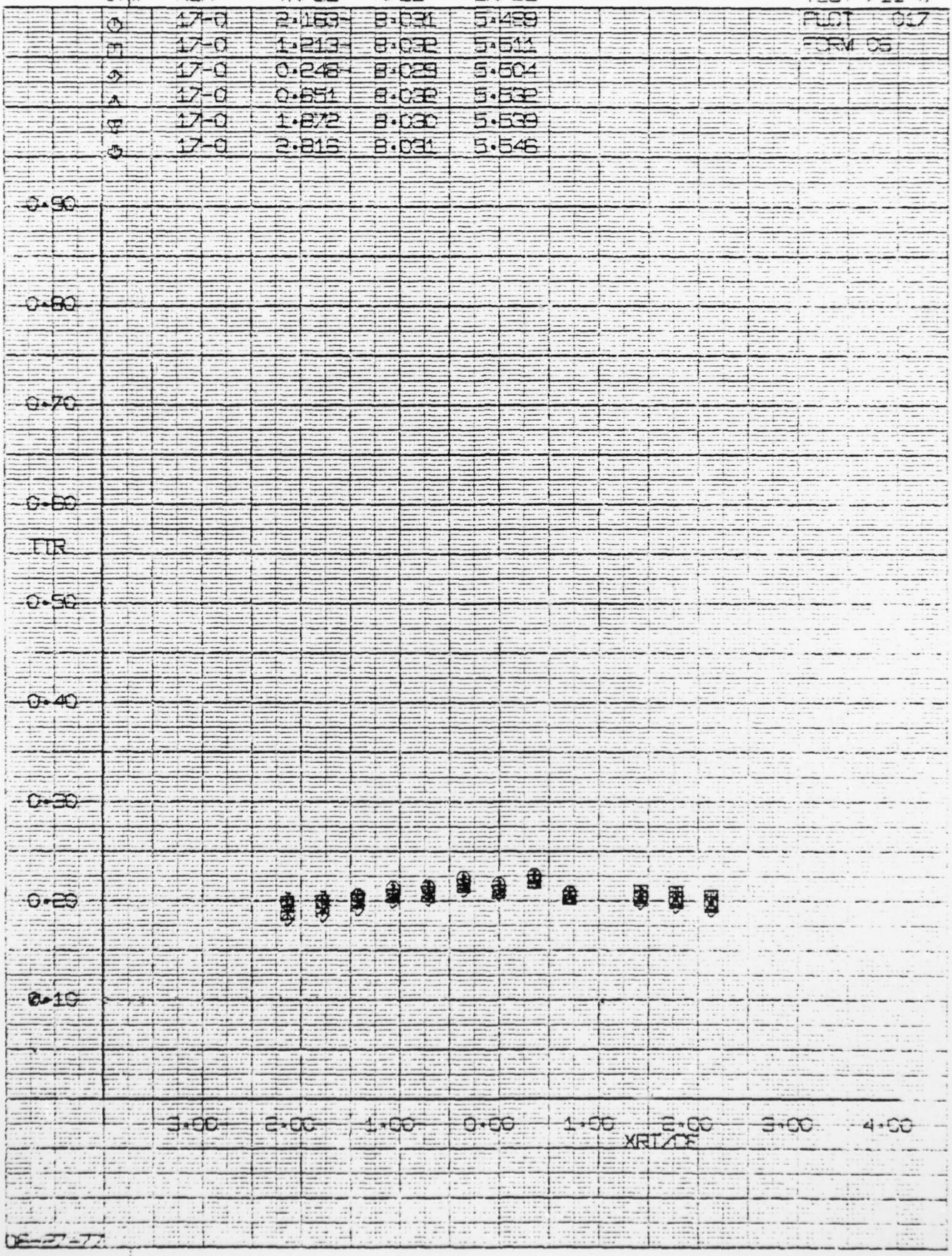
TEST 711-0
PLOT 017
FORM 04



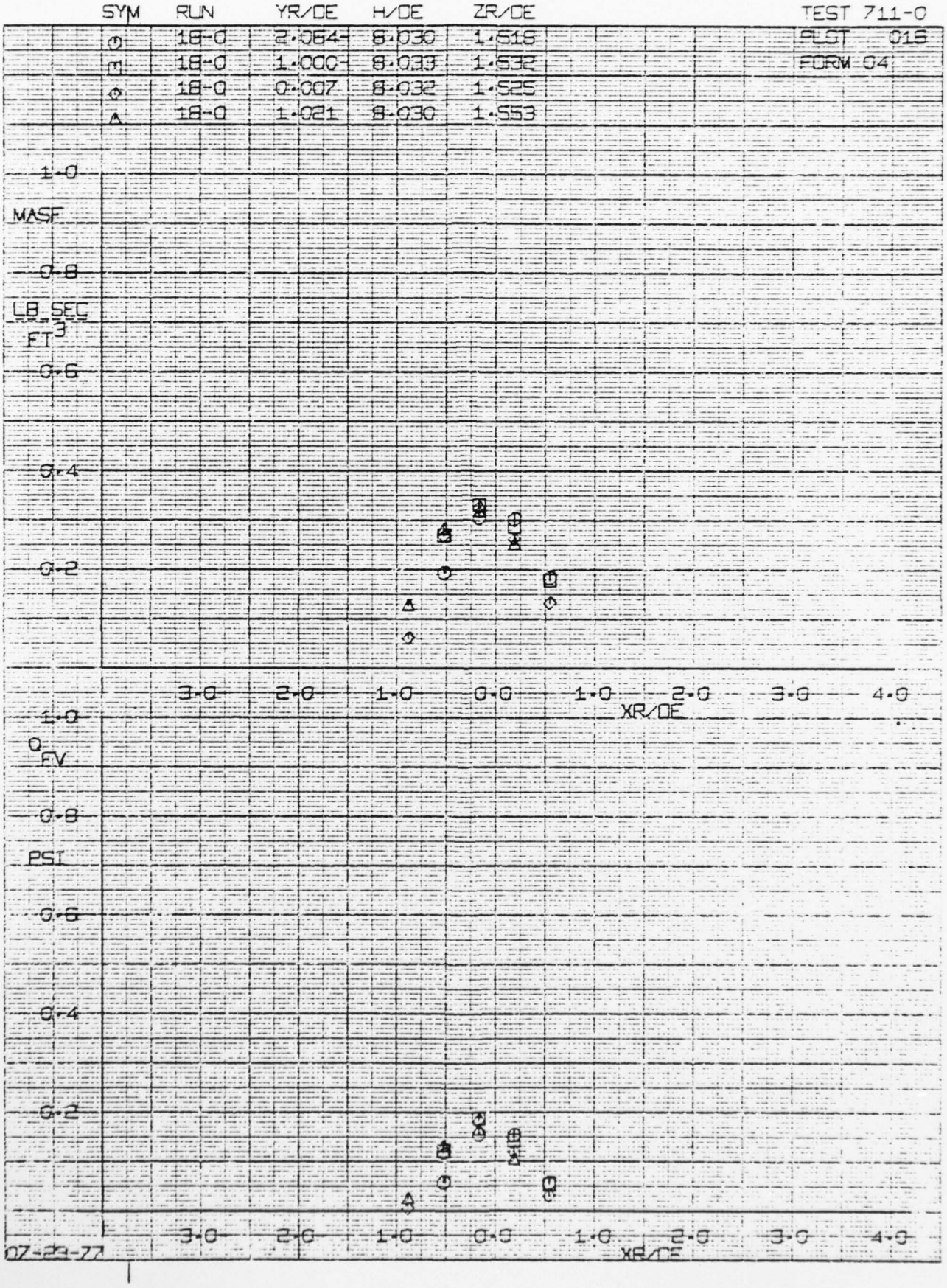

SYM RUN YR/DE H/DE ZR/DE
17-0 1.586 8.031 5.498
17-0 1.035 8.032 5.511
17-0 0.071 8.029 5.504
17-0 1.028 8.032 5.532
17-0 2.050 8.030 5.538
TEST 711-0
PLOT 017
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XB/DE
CG-ZF-ZZ

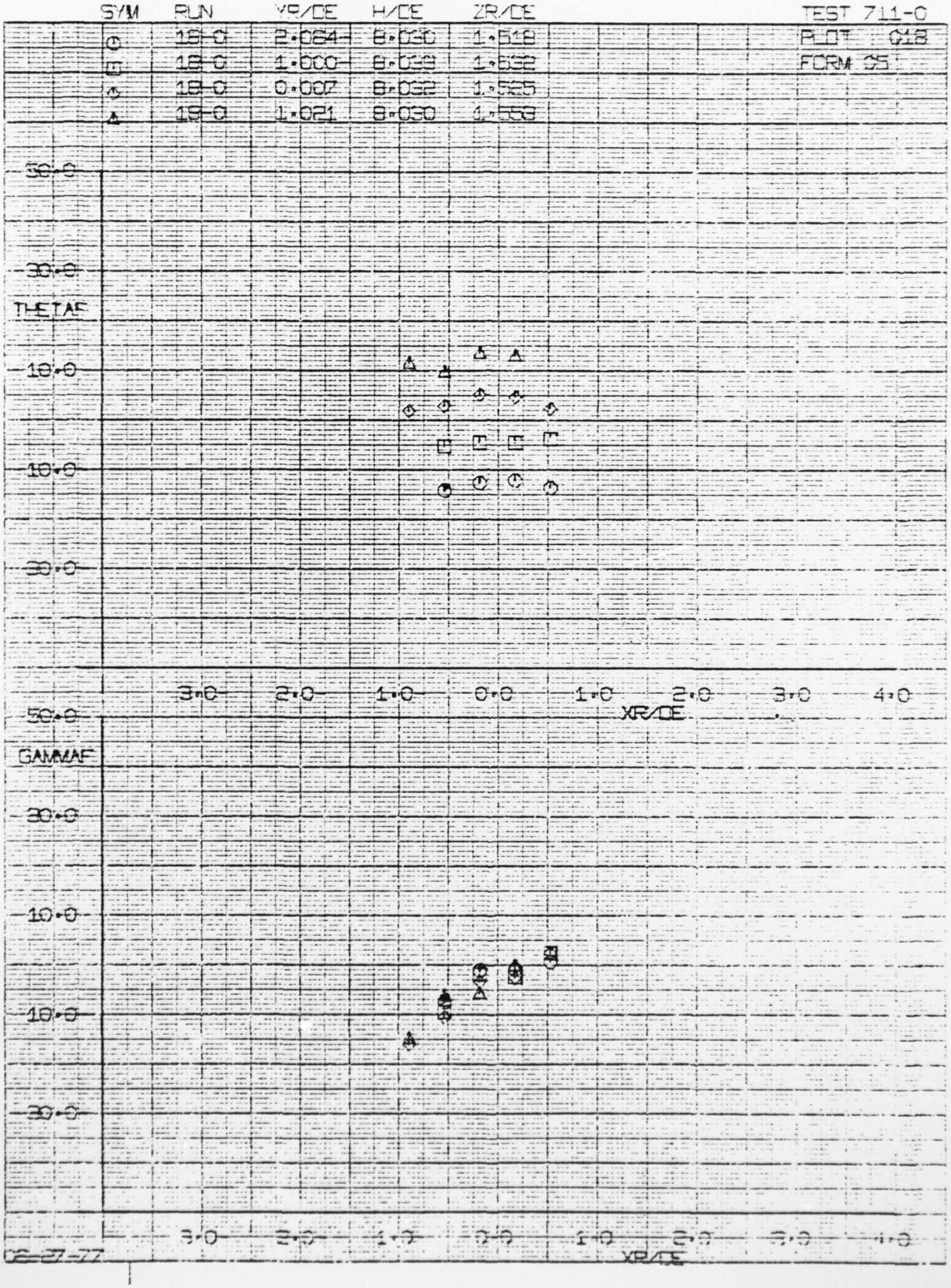
SYM	RUN	YR/DE	H/DE	ZR/DE
⏱	17-0	2.163	8.031	5.439
□	17-0	1.213	8.032	5.511
◇	17-0	0.248	8.029	5.504
△	17-0	0.651	8.032	5.532
▽	17-0	1.872	8.030	5.539
⏱	17-0	2.816	8.031	5.546

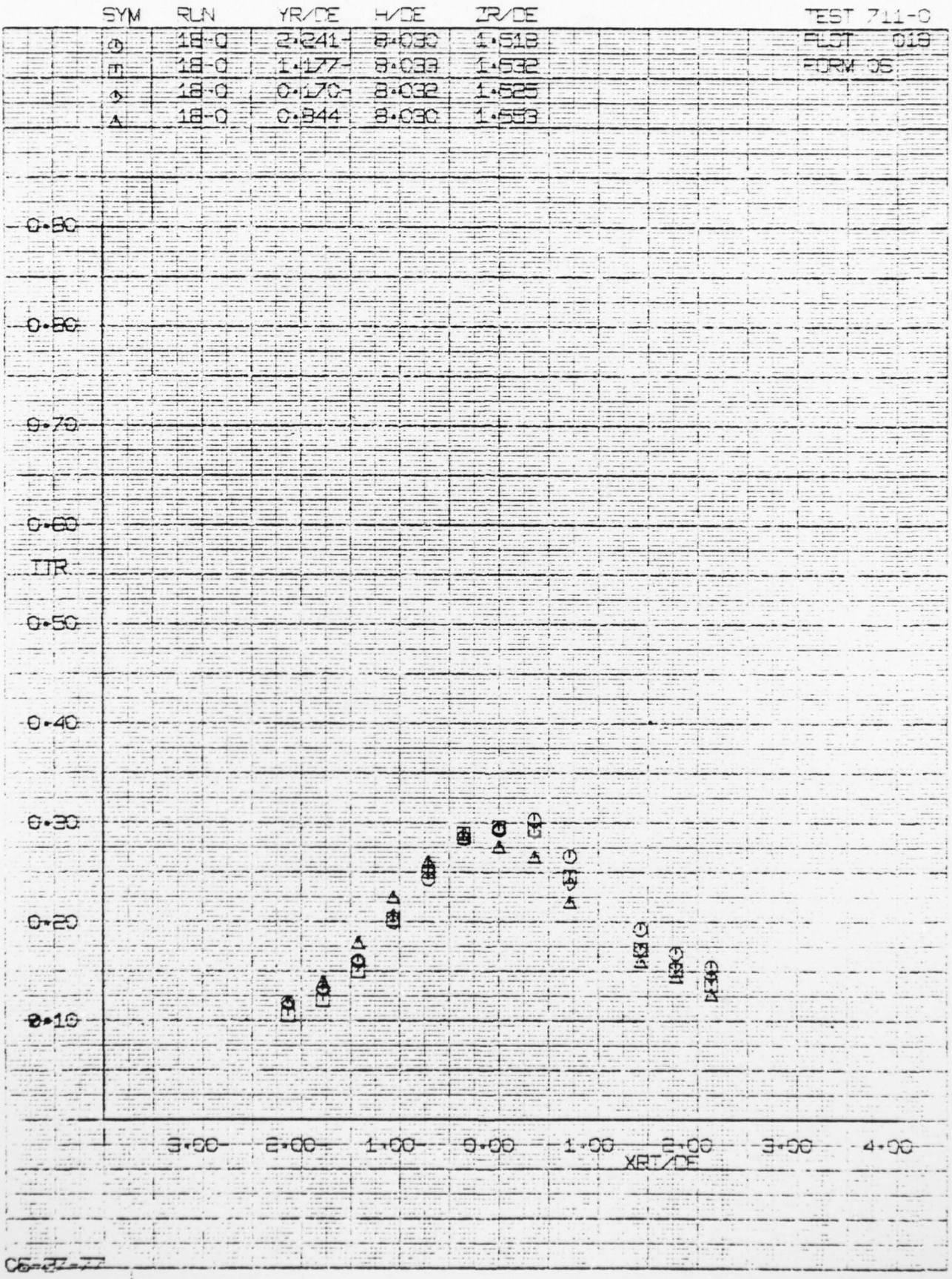
TEST 711-0
PLOT 017
FORM 05

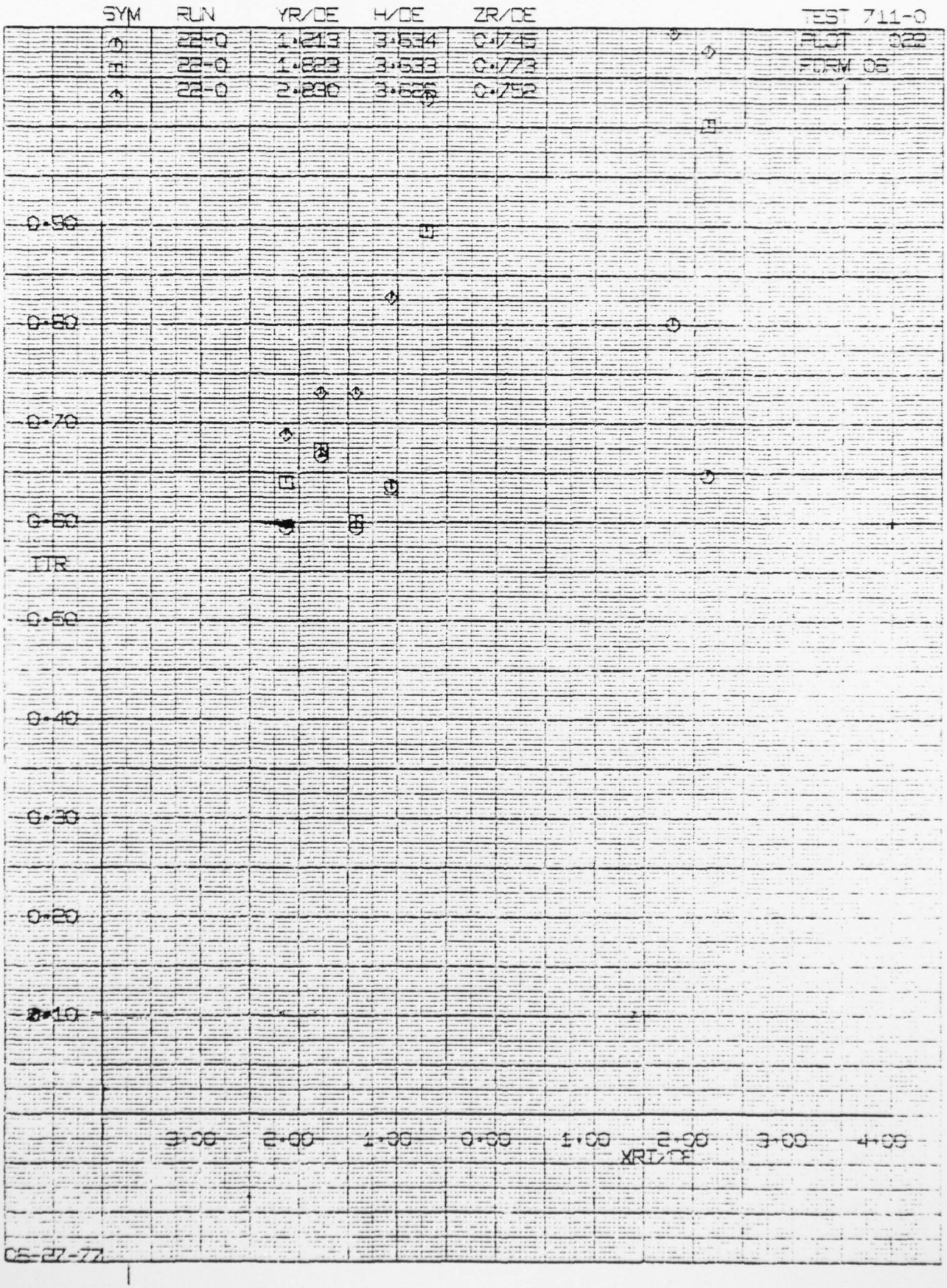


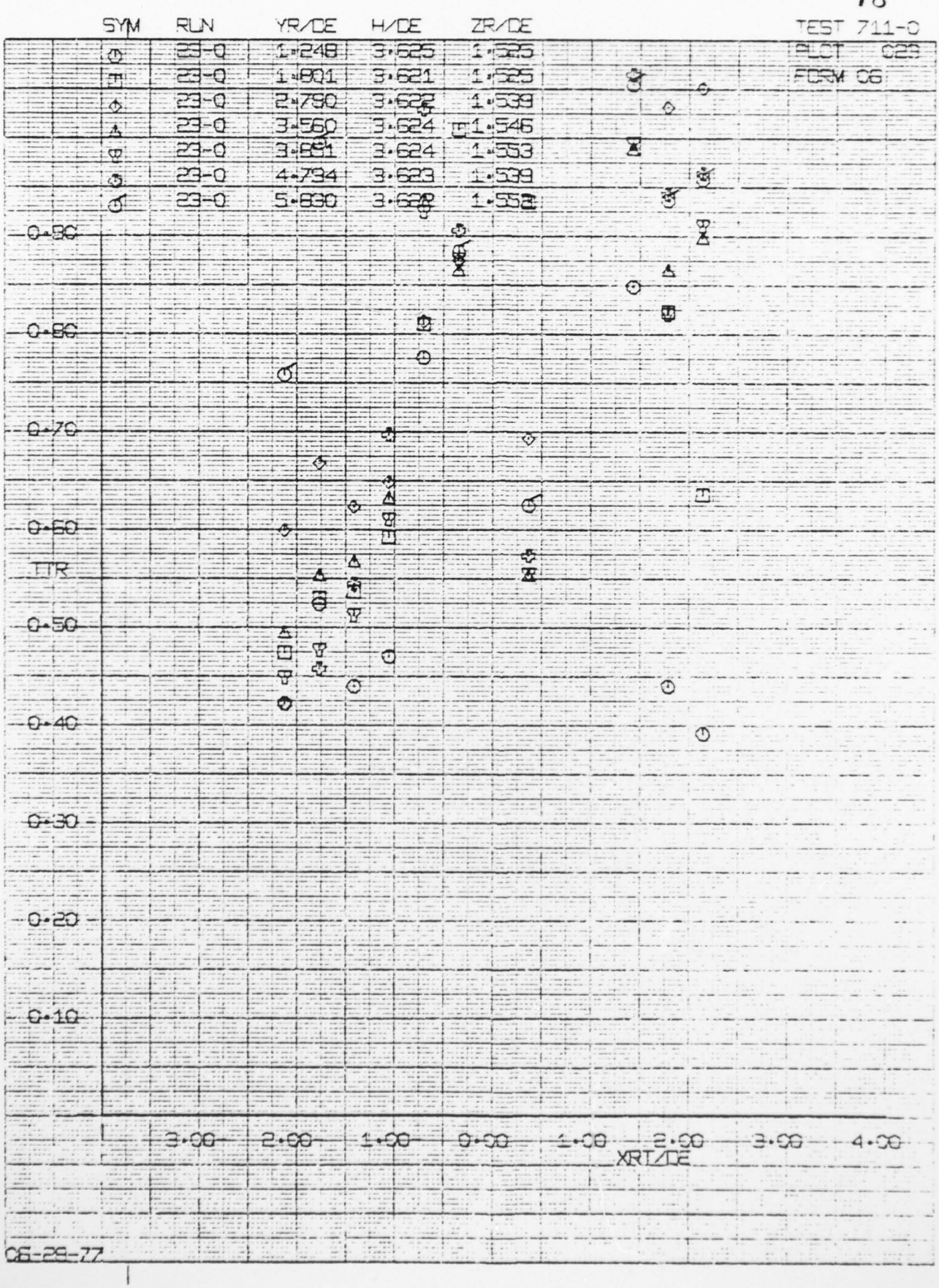
05-27-77

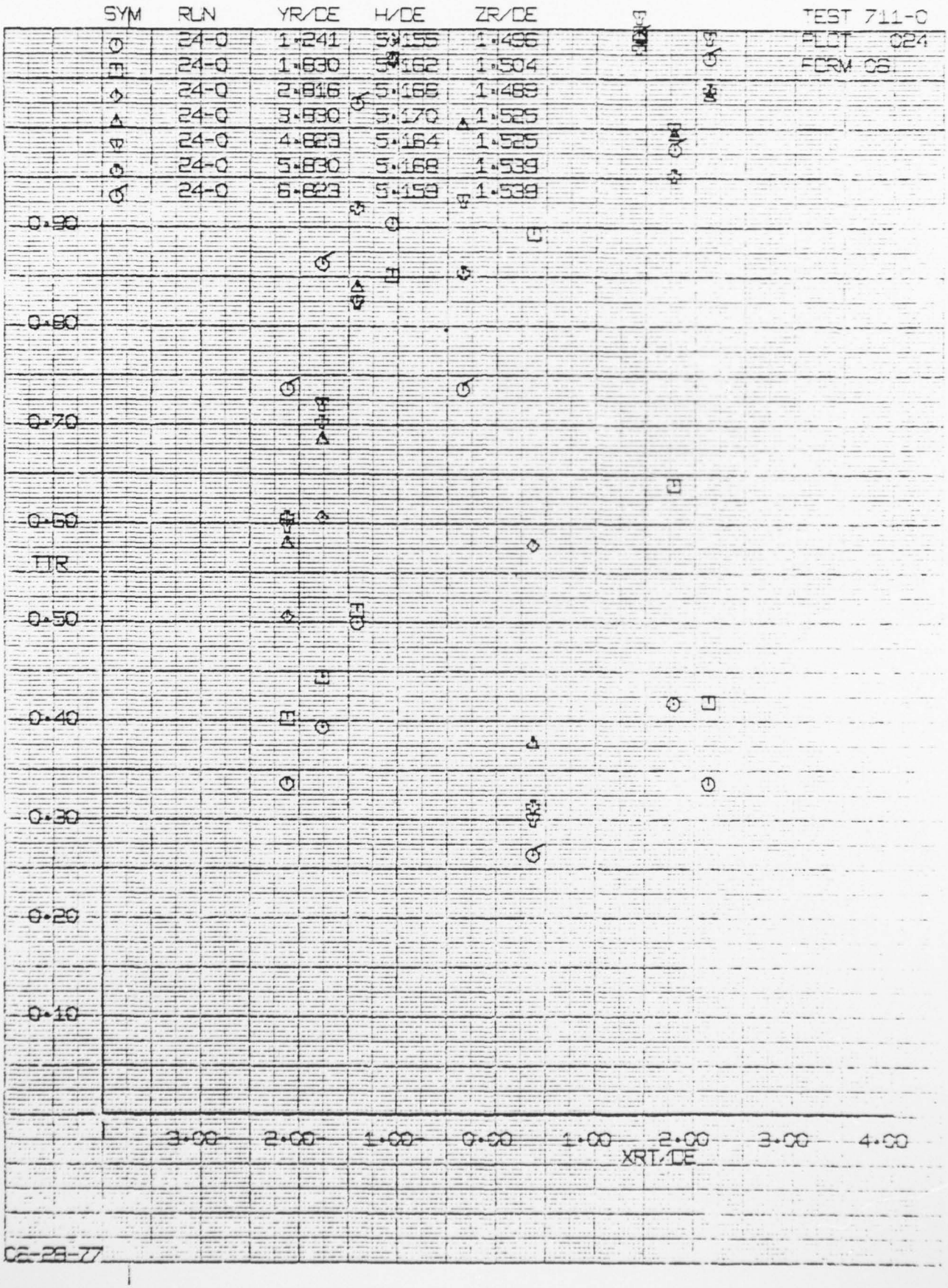

SYM RUN YR/DE H/DE ZR/DE
18-0 2.064 8.030 1.518
18-0 1.000 8.033 1.532
18-0 0.007 8.032 1.525
18-0 1.021 8.030 1.553
TEST 711-0
PLST 018
FORM 04
MASF
LB SEC
FT3
PSI
XR/DE
07-23-77

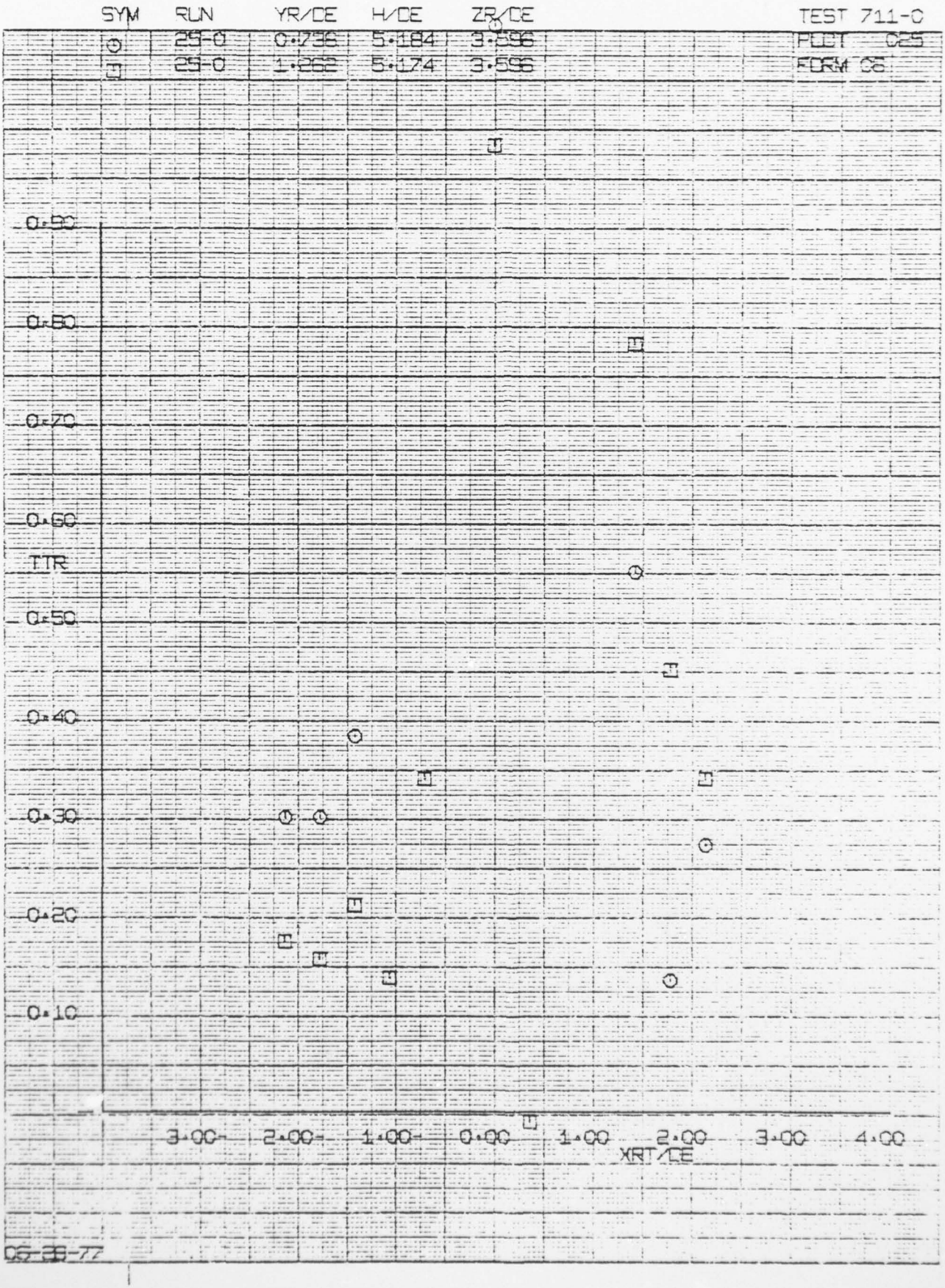

SYM RUN VR/DE H/DE ZR/DE
16-0 2.064 8.030 1.518
18-0 1.000 8.028 1.532
18-0 0.007 8.032 1.525
19-0 1.021 8.030 1.558
TEST 711-0
PLOT 018
FORM 25
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-27-77

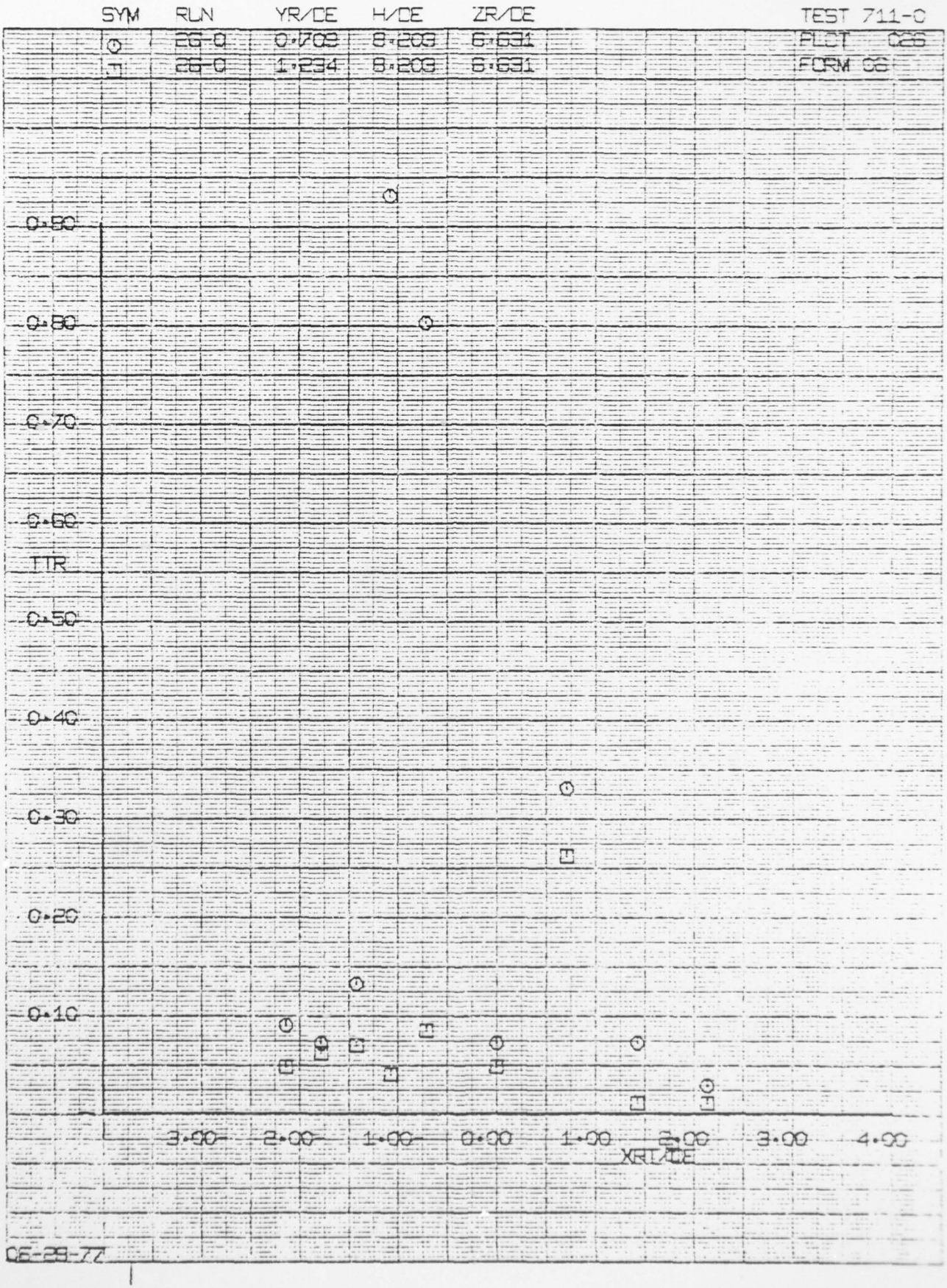

SYM RUN YR/DE H/DE ZR/DE TEST 711-0
18-0 2.241 8.030 1.518 PLOT 019
18-0 1.177 8.033 1.532 FORM 05
18-0 0.170 8.032 1.525
18-0 0.344 8.030 1.553
0.80
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE


SYM RUN YR/DE H/DE ZR/DE
22-0 1.213 3.534 0.745
22-0 1.823 3.533 0.773
22-0 2.230 3.626 0.752
TEST 711-0
PLOT 022
FORM 05
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRI/DE
06-27-77


SYM RUN YR/DE H/DE ZR/DE
23-0 1.248 3.625 1.525
23-0 1.801 3.621 1.525
23-0 2.790 3.622 1.539
23-0 3.560 3.624 1.546
23-0 3.881 3.624 1.553
23-0 4.794 3.623 1.539
23-0 5.830 3.628 1.552
TEST 711-0
PLOT 029
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
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2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-29-77

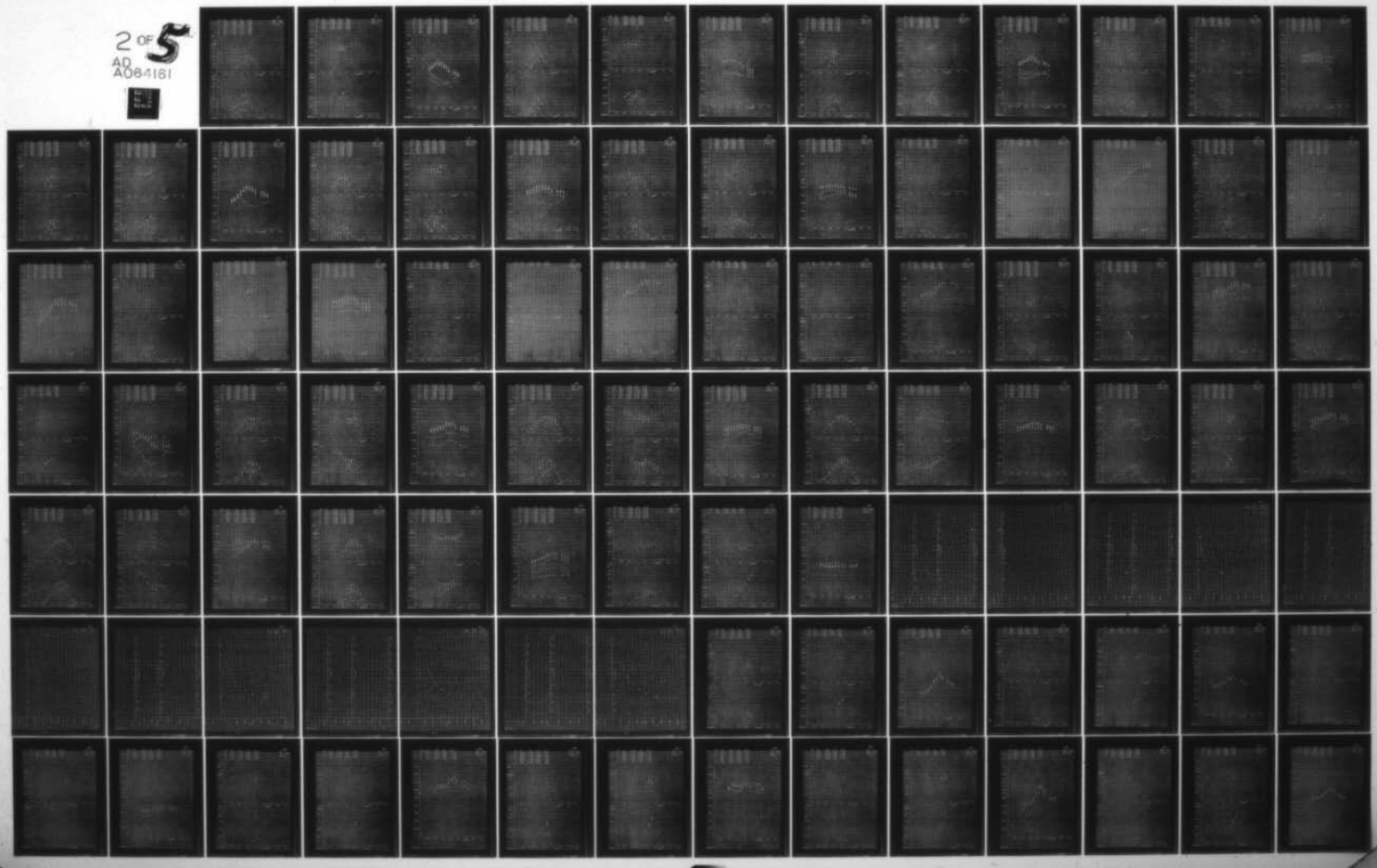

SYM RUN YR/DE H/DE ZR/DE
24-0 1.241 5.155 1.486
24-0 1.630 5.162 1.504
24-0 2.816 5.165 1.489
24-0 3.830 5.170 1.525
24-0 4.823 5.164 1.525
24-0 5.830 5.168 1.539
24-0 6.823 5.159 1.539
TEST 711-C
PLOT 024
FORM 08
0.90
0.80
0.70
0.60
TTR
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0.40
0.30
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0.00
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2.00
3.00
4.00
XRT/DE
02-28-77

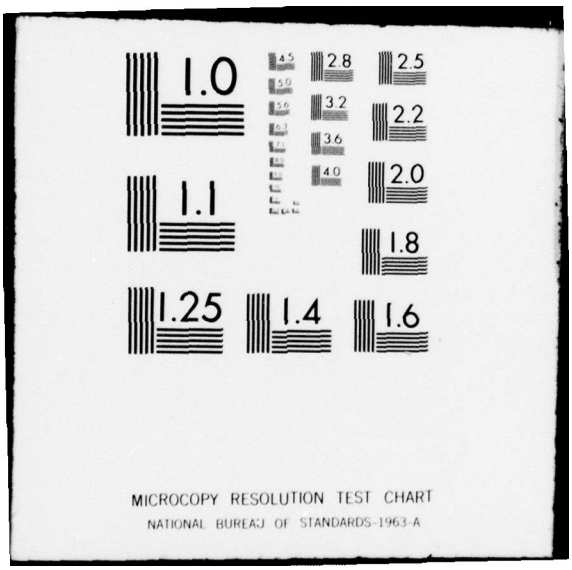

SYM RUN YR/CE H/CE ZR/CE
25-0 0.736 5.184 3.596
25-0 1.262 5.174 3.596
TEST 711-0
PLOT 025
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
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1.00
0.00
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2.00
3.00
4.00
XRT/CE
06-28-77

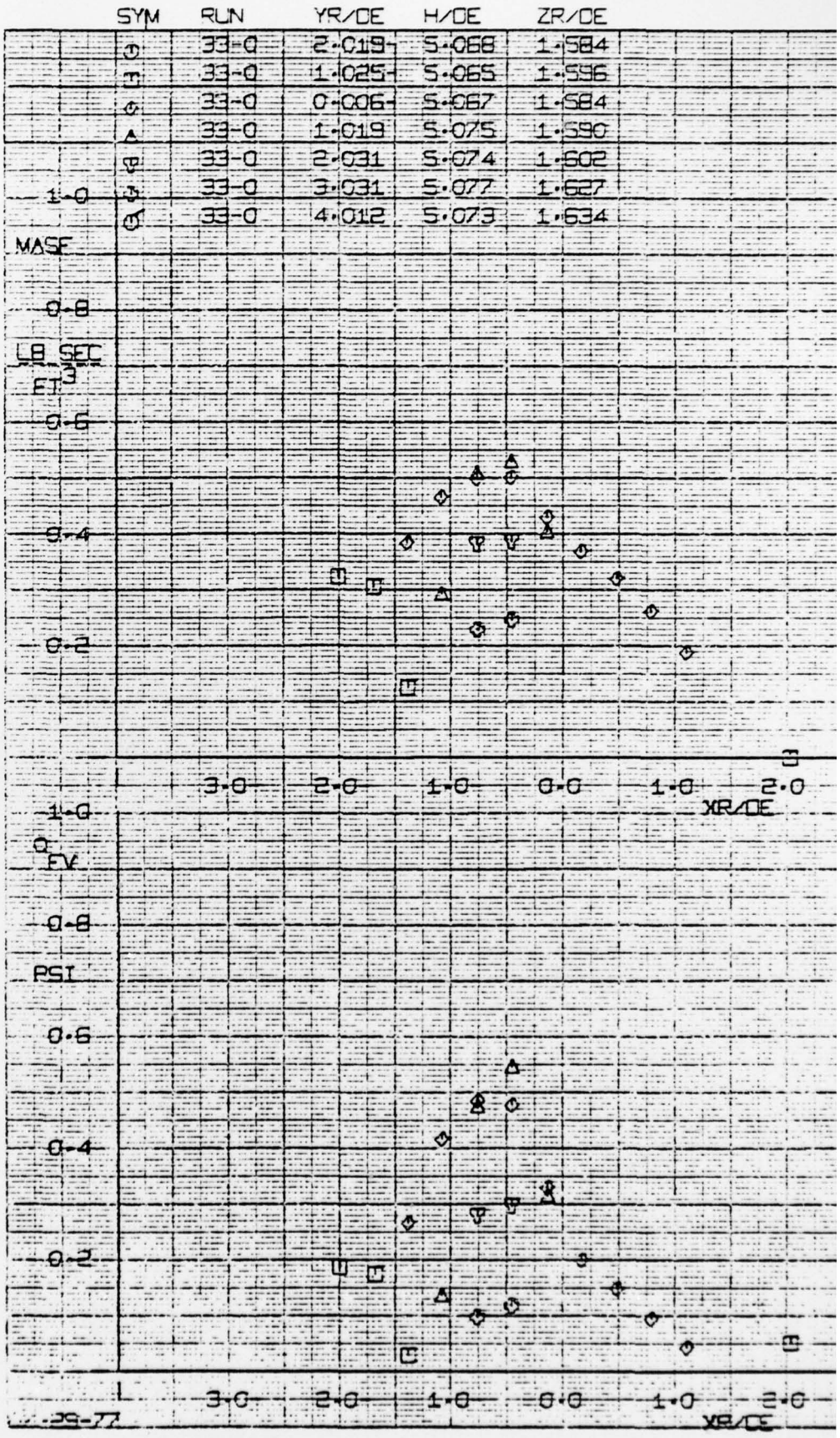

SYM RUN YR/DE H/DE ZR/DE
26-0 0.702 8.203 6.631
26-0 1.234 8.203 6.631
TEST 711-0
FLST 026
FORM 08
0.90
0.80
0.70
0.60
TTR
0.50
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XRT/DE
06-28-77

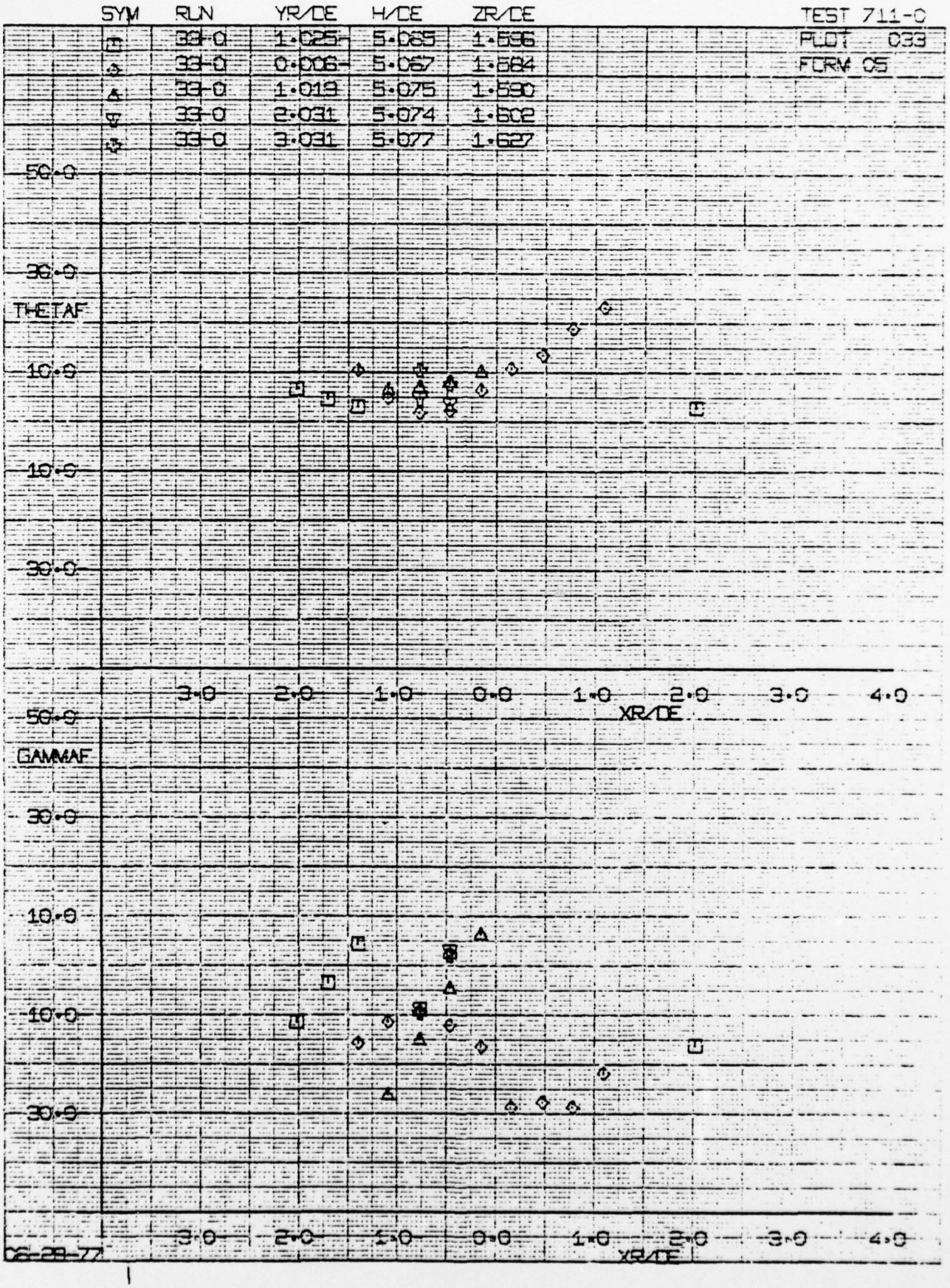
AD-A064 161 GENERAL DYNAMICS SAN DIEGO CA CONVAIR DIV F/G 1/3
LOW SPEED WIND TUNNEL TESTS TO EVALUATE THE AERODYNAMIC AND THE--ETC(U)
AUG 77 M B EILERT N00014-76-C-0698
UNCLASSIFIED CASD-GDLST-711 NL

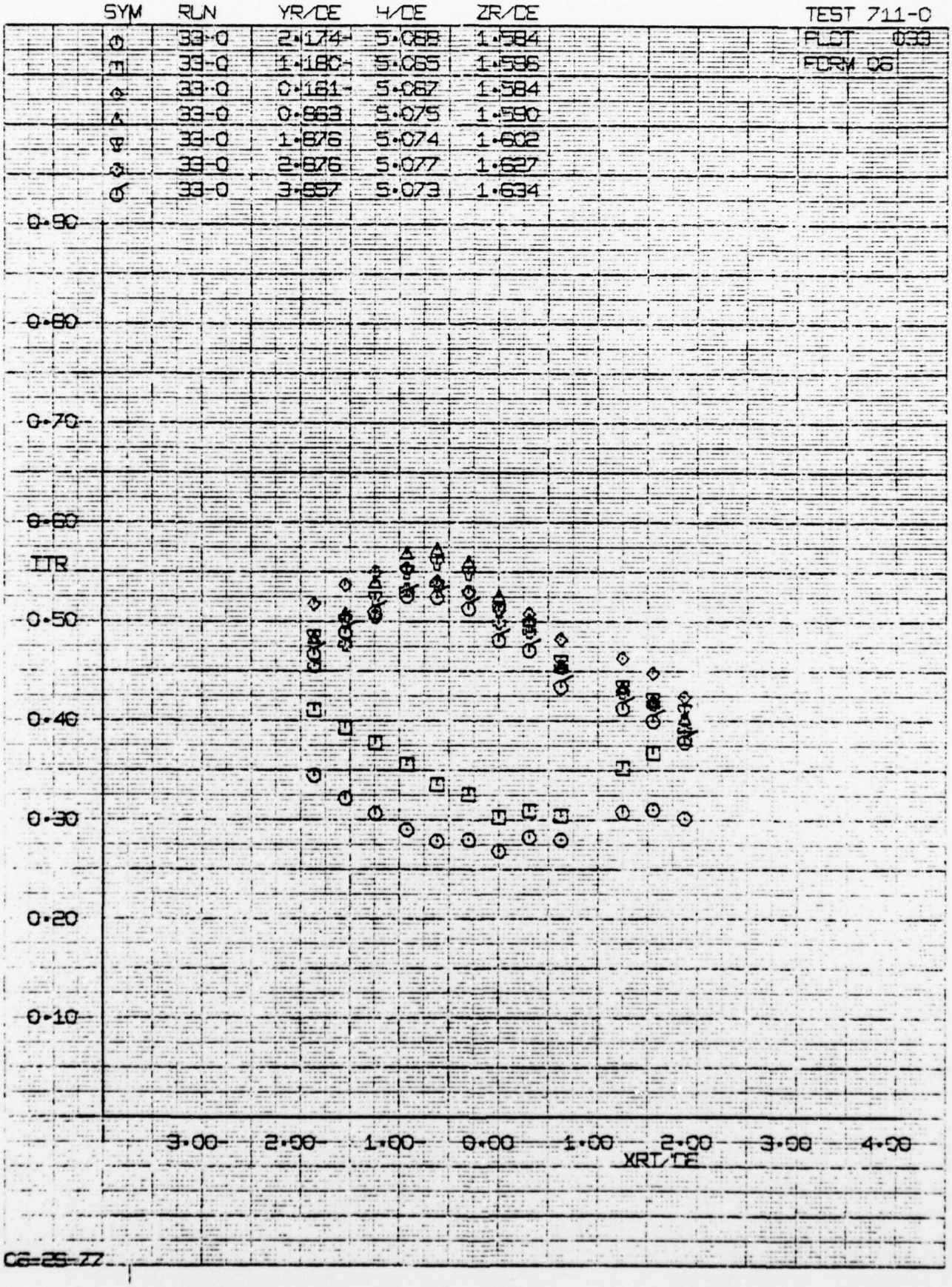
2 OF 5
AD A064161




1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A


SYM RUN YR/DE H/DE ZR/DE
33-0 2.019 5.068 1.584
33-0 1.025 5.065 1.596
33-0 0.006 5.067 1.584
33-0 1.019 5.075 1.590
33-0 2.031 5.074 1.602
33-0 3.031 5.077 1.627
33-0 4.012 5.073 1.634
MASS
LB SEC
FT
3
XR/DE
PSI
XR/DE
29-77


SYM RUN YR/DE H/DE ZR/DE
33-0 1.025- 5.085 1.536
33-0 0.006- 5.057 1.584
33-0 1.019 5.075 1.580
33-0 2.031 5.074 1.602
33-0 3.031 5.077 1.627
TEST 711-0
PLOT 033
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
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10.0
30.0
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XR/DE
06-28-77

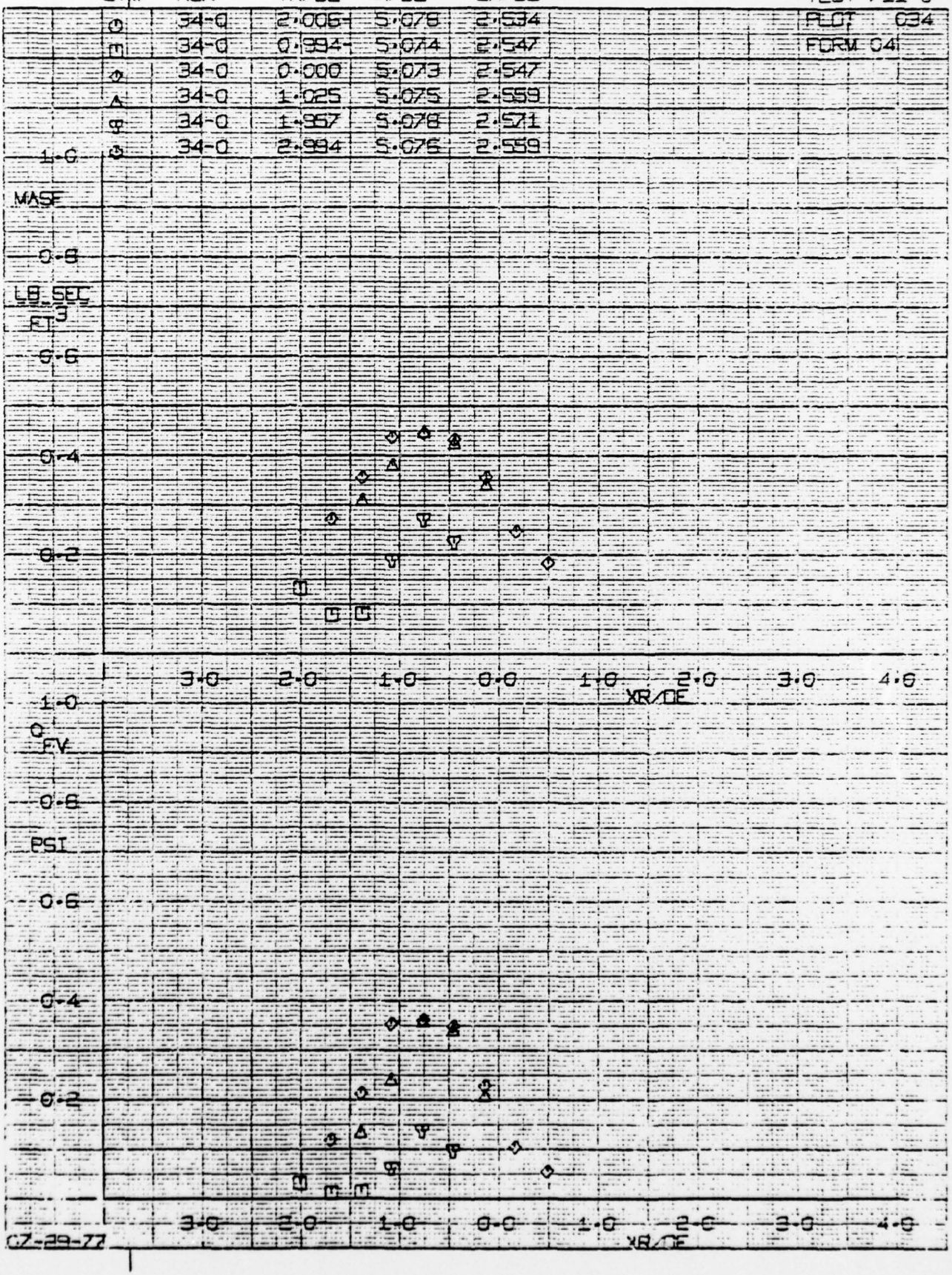

SYM RUN YR/DE H/DE ZR/DE
33-0 2.174- 5.068 1.584
33-0 1.180- 5.065 1.596
33-0 0.161- 5.067 1.584
33-0 0.863 5.075 1.590
33-0 1.876 5.074 1.602
33-0 2.876 5.077 1.627
33-0 3.857 5.073 1.634
TEST 711-0
FLT 033
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
06-25-77

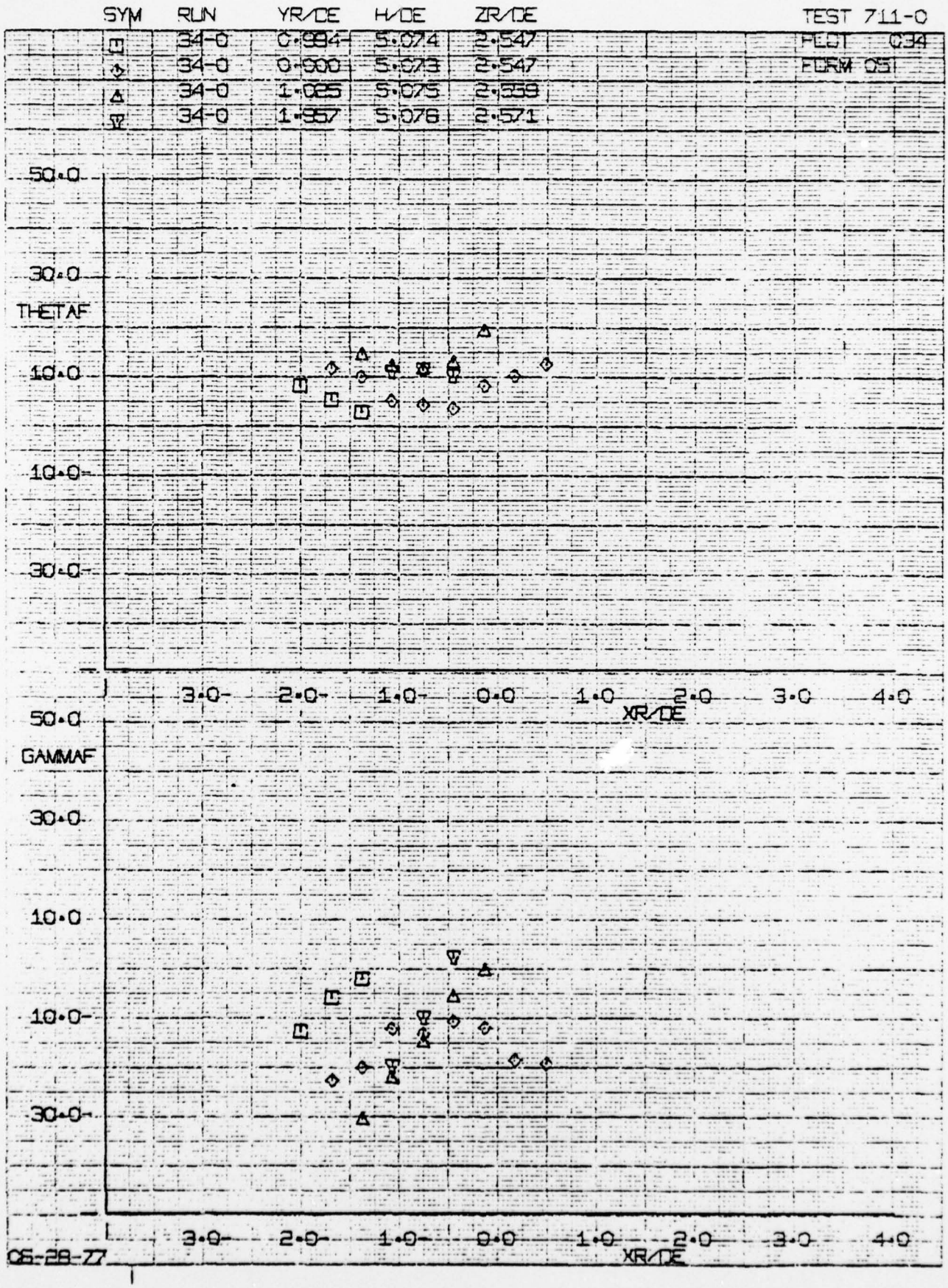
TEST 711-0

PLOT 034

FORM 04

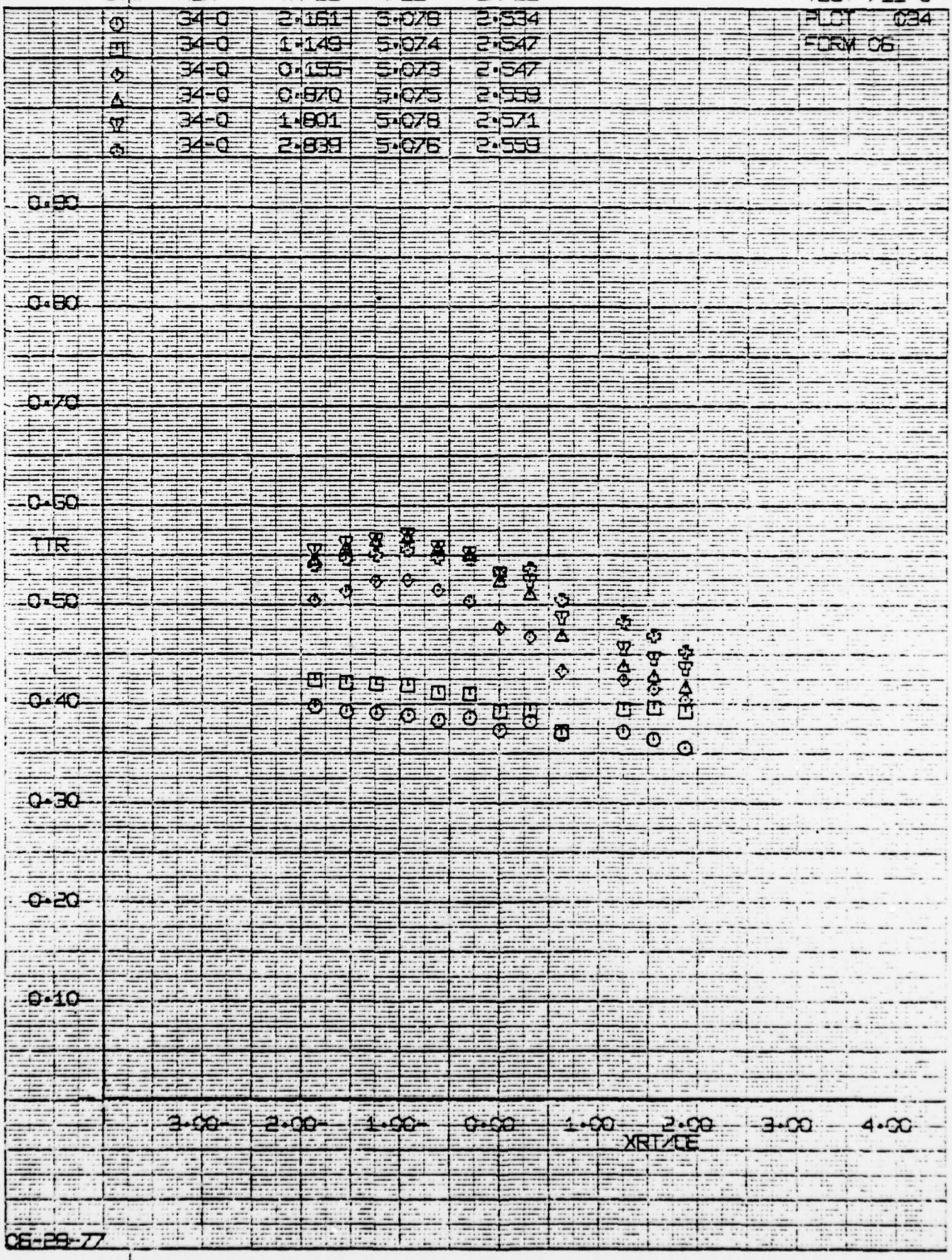
SYM	RUN	YR/DE	H/DE	ZR/DE
○	34-0	2.006	5.078	2.534
□	34-0	0.994	5.074	2.547
◇	34-0	0.000	5.073	2.547
△	34-0	1.025	5.075	2.559
▽	34-0	1.967	5.078	2.571
◁	34-0	2.984	5.076	2.559



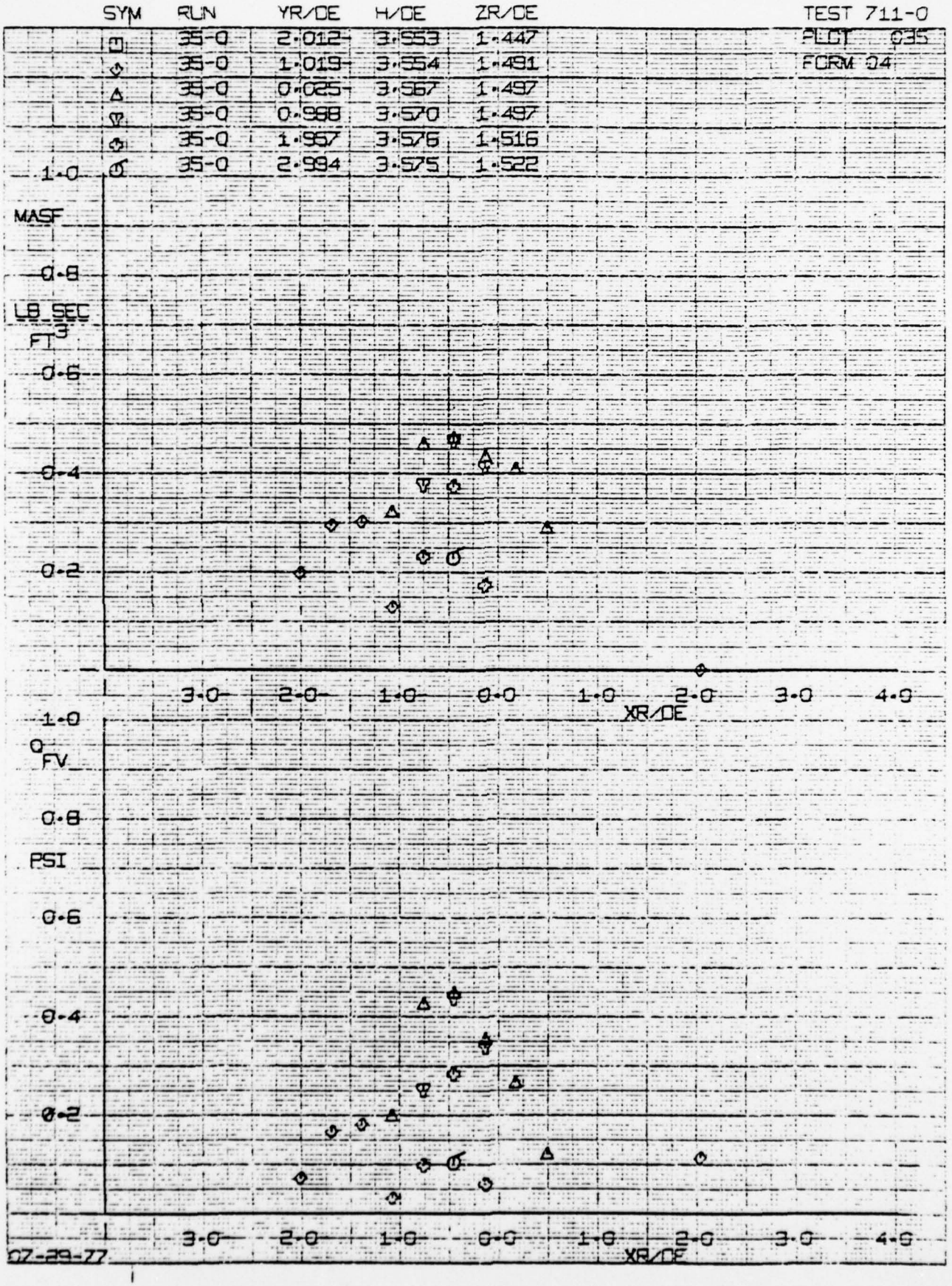

SYM RUN YR/DE H/DE ZR/DE
34-0 0.984 5.074 2.547
34-0 0.900 5.073 2.547
34-0 1.085 5.075 2.559
34-0 1.957 5.076 2.571
TEST 711-0
PLOT C34
FORM 05
50.0
30.0
THETAF
10.0
10.0-
30.0-
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0-
30.0-
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
06-28-77

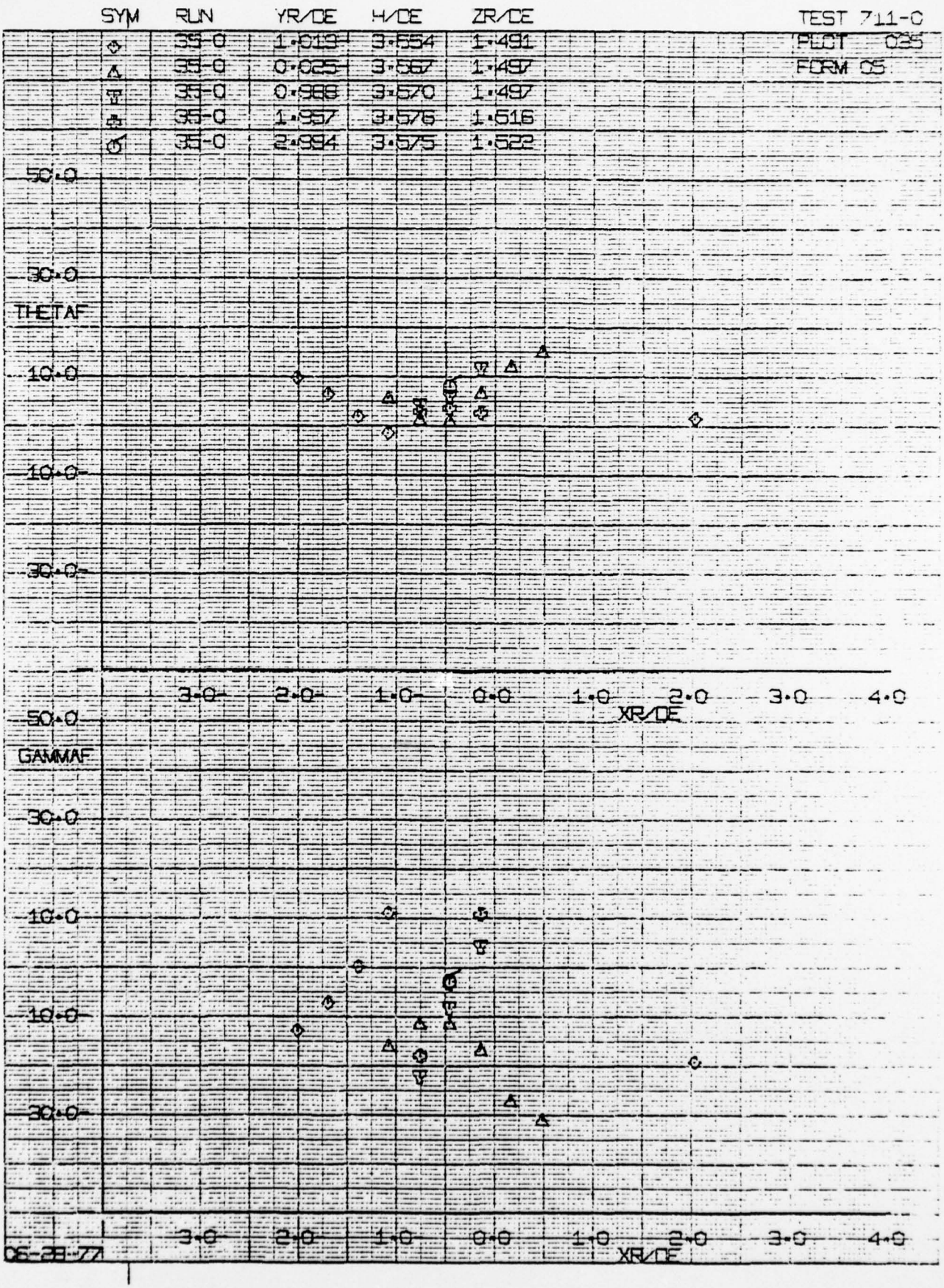
SYM	RUN	YR/DE	H/DE	ZR/DE
⊙	34-0	2.161	5.078	2.534
□	34-0	1.149	5.074	2.547
◇	34-0	0.155	5.073	2.547
△	34-0	0.870	5.075	2.559
▽	34-0	1.801	5.078	2.571
⊙	34-0	2.839	5.076	2.559

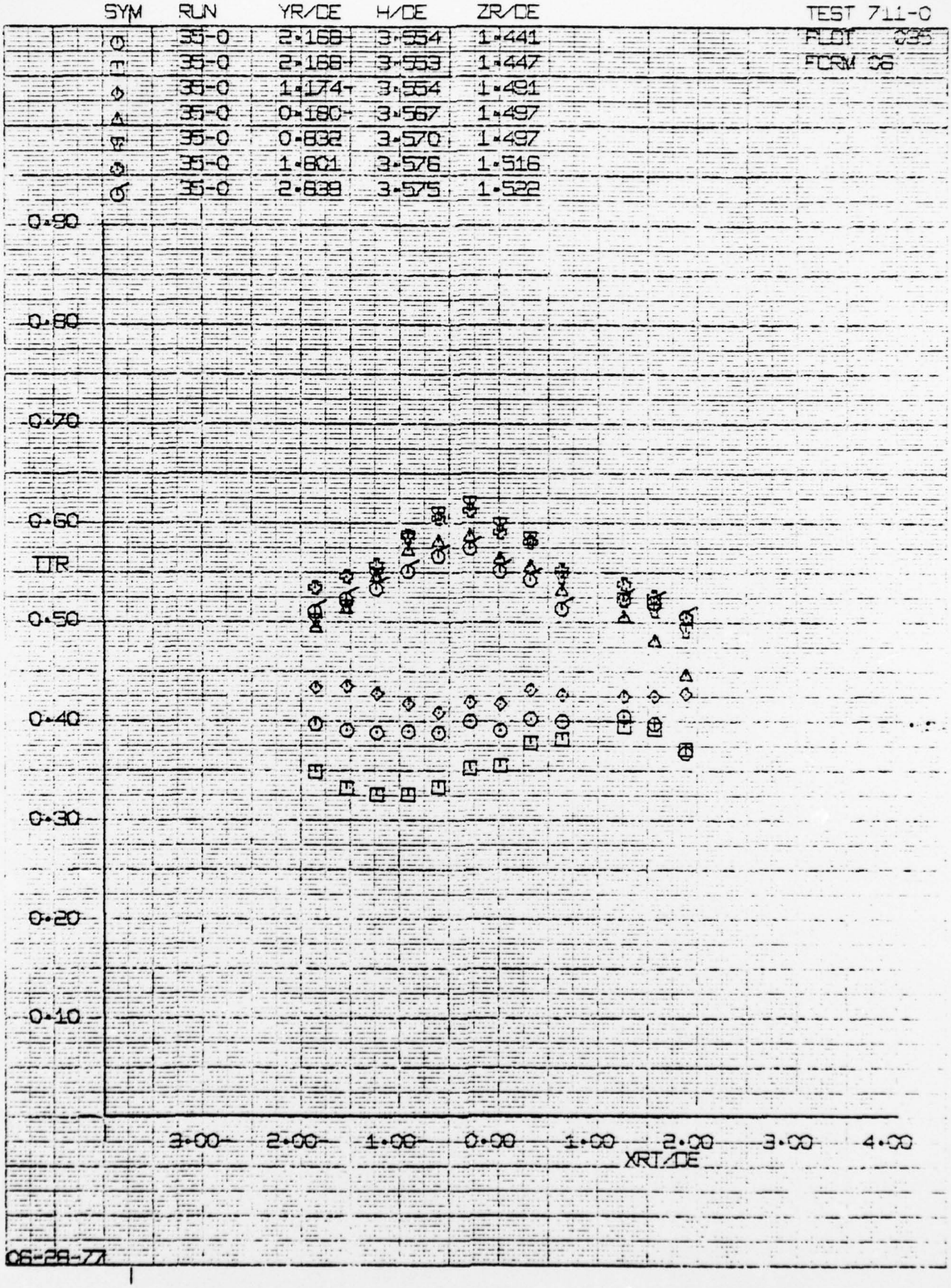
TEST 711-0
PLOT 034
FORM 06



06-28-77


SYM RUN YR/DE H/DE ZR/DE
35-0 2.012 3.553 1.447
35-0 1.019 3.554 1.491
35-0 0.025 3.567 1.497
35-0 0.988 3.570 1.497
35-0 1.957 3.576 1.516
35-0 2.984 3.575 1.522
TEST 711-0
PLOT 035
FORM 04
MASF
LB_SEC
FT3
XR/DE
PSI
07-29-77


SYM RUN YR/DE H/DE ZR/DE
35-0 1.013 3.554 1.491
35-0 0.025 3.567 1.497
35-0 0.988 3.570 1.497
35-0 1.957 3.576 1.516
35-0 2.994 3.575 1.522
TEST 711-0
PLOT 035
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-28-77

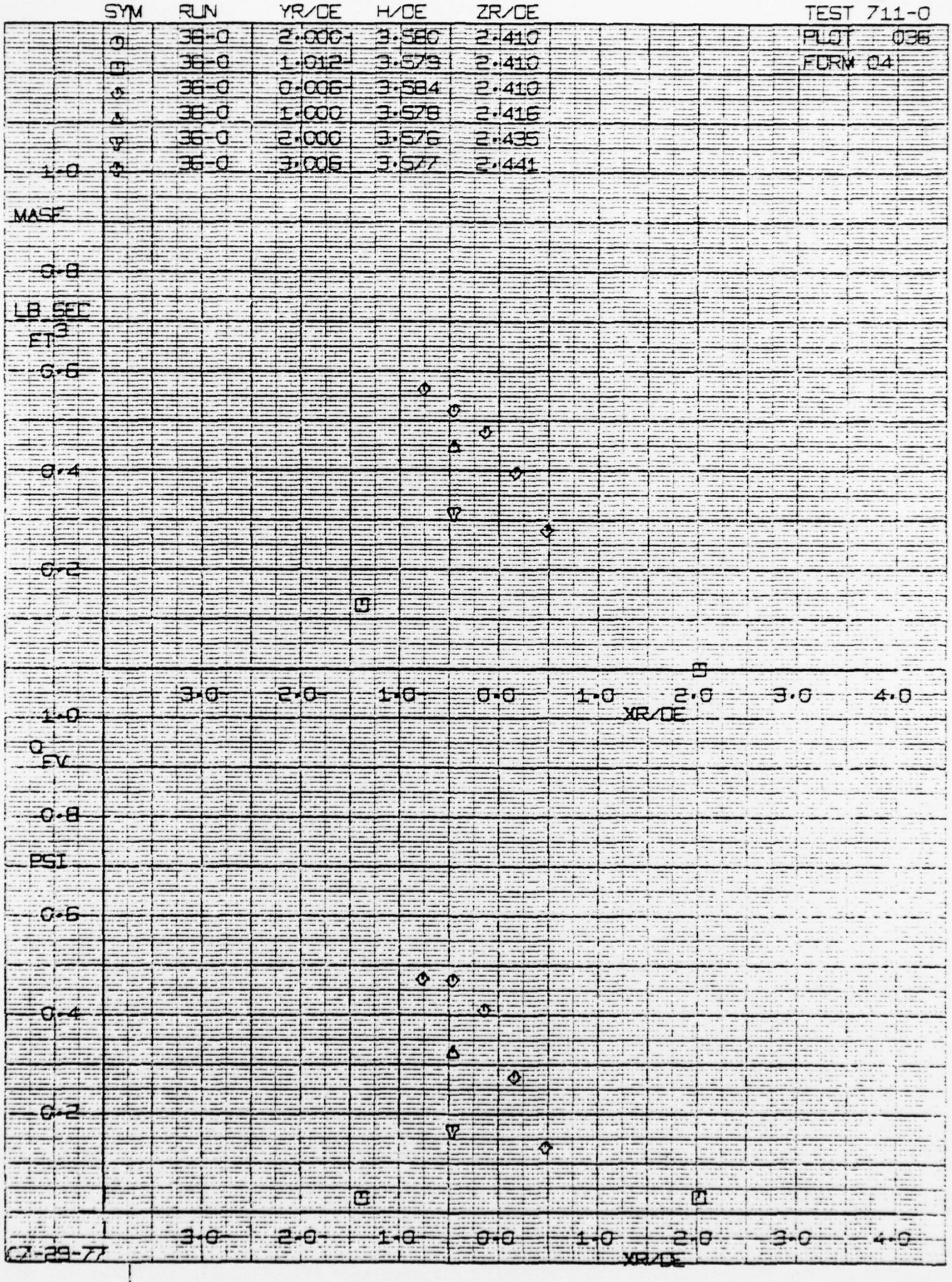

SYM RUN YR/DE H/DE ZR/DE
35-0 2.168 3.554 1.441
35-0 2.168 3.553 1.447
35-0 1.174 3.554 1.491
35-0 0.180 3.567 1.497
35-0 0.832 3.570 1.497
35-0 1.801 3.576 1.516
35-0 2.838 3.575 1.522
TEST 711-0
PLOT 035
FORM 06
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
TTR
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-28-77

TEST 711-0

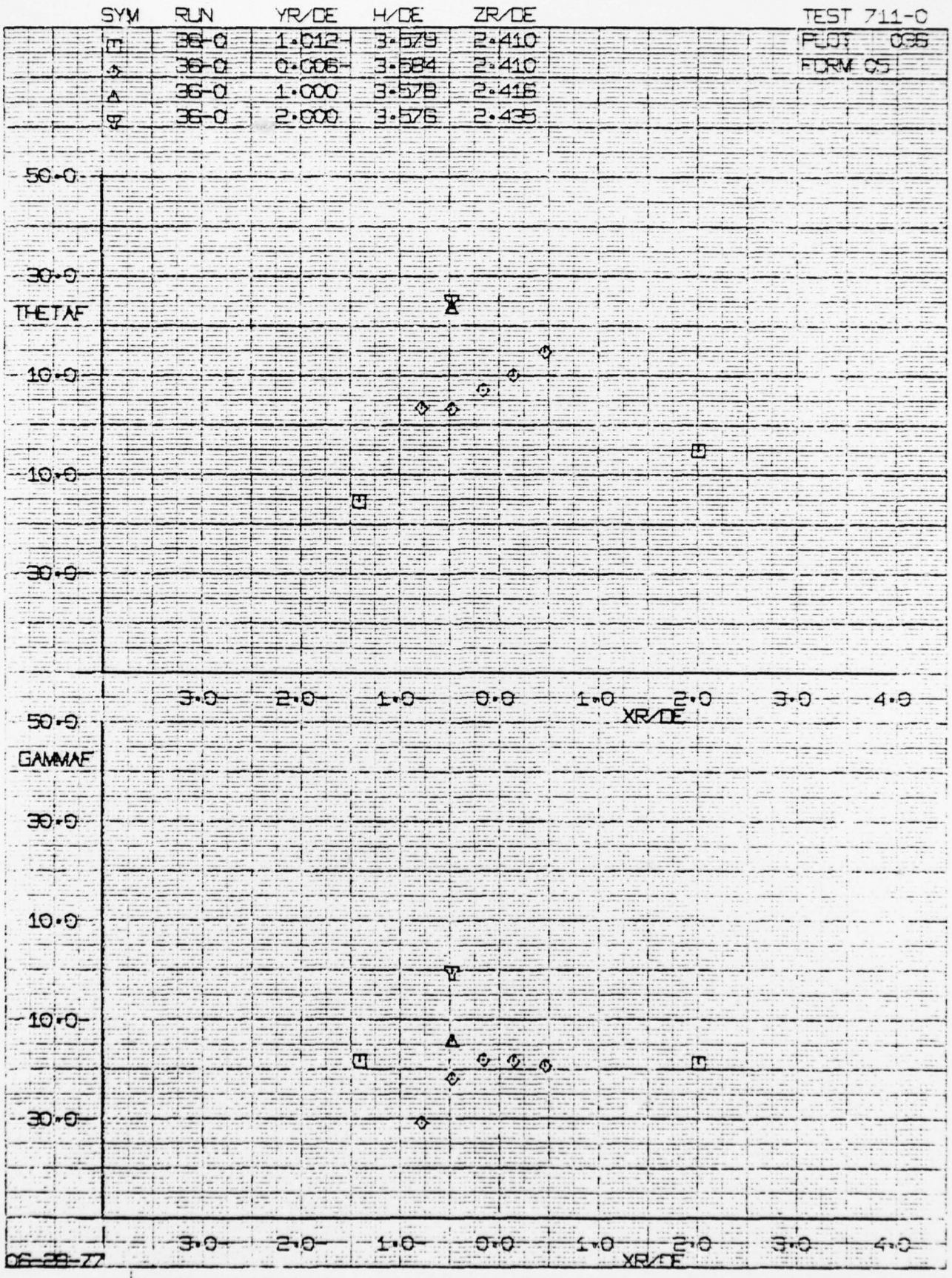
PLOT 036

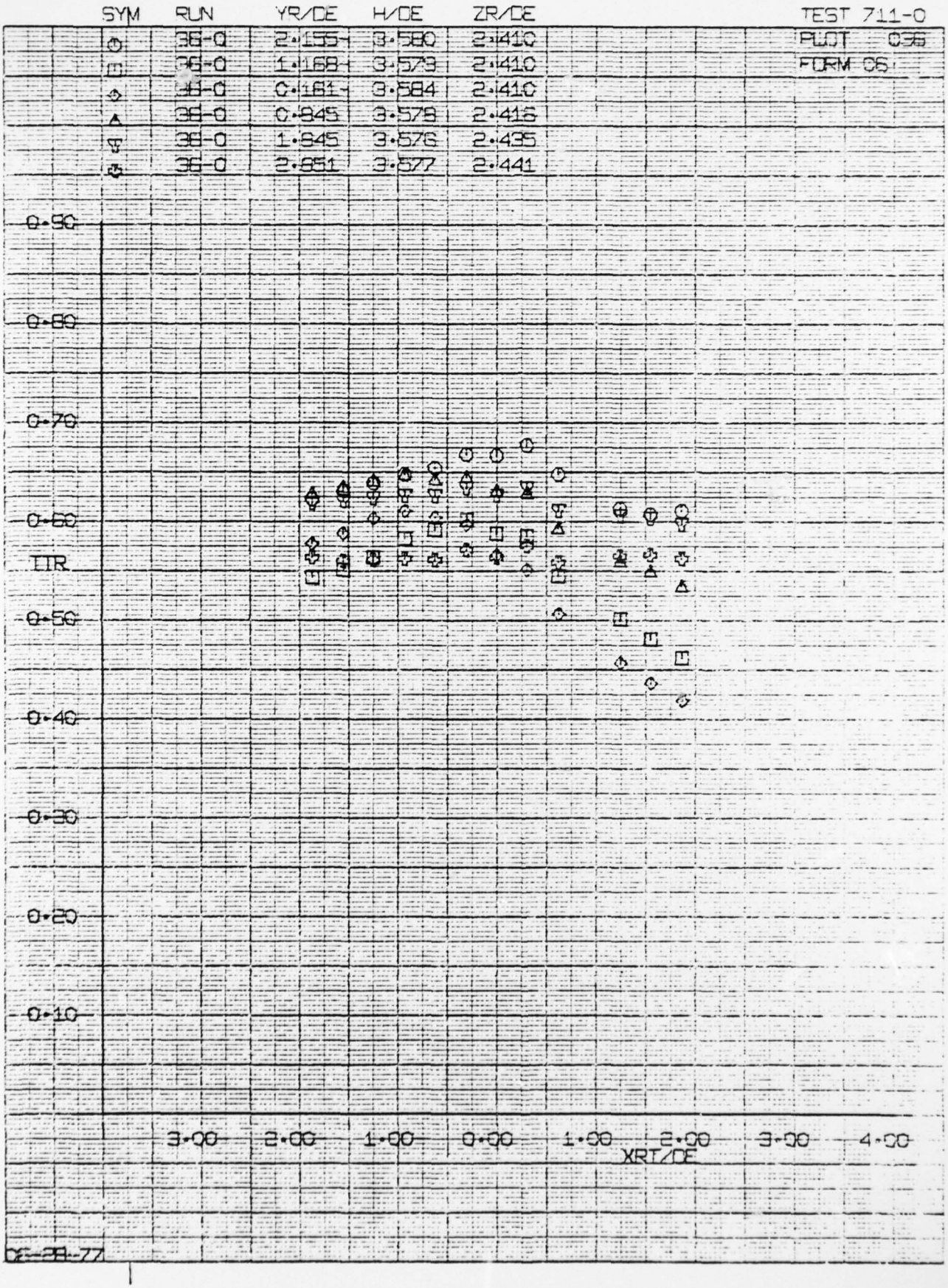
FORM 04

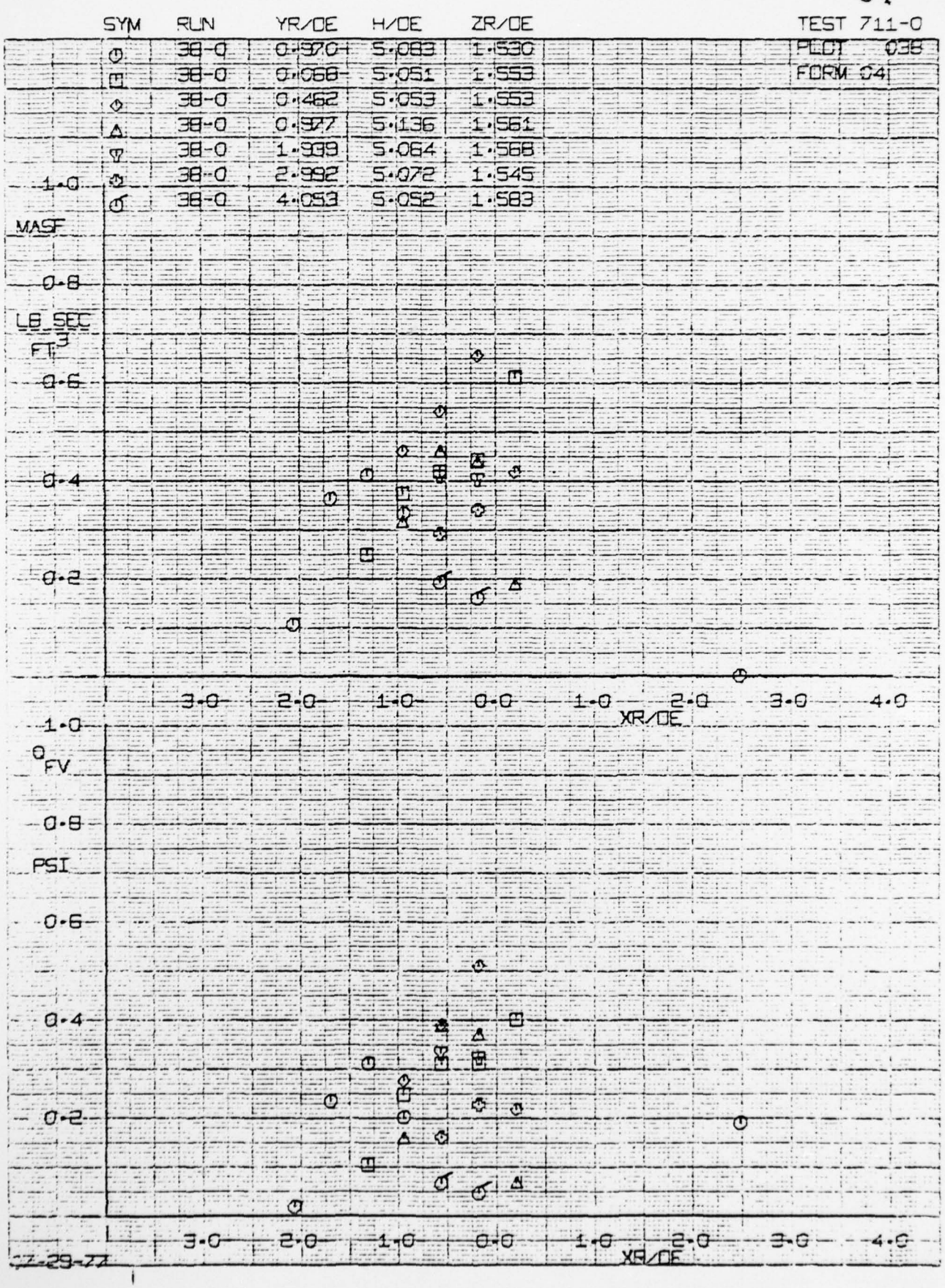
SYM	RUN	YR/DE	H/DE	ZR/DE
○	36-0	2.000	3.580	2.410
□	36-0	1.012	3.573	2.410
◇	36-0	0.006	3.584	2.410
△	36-0	1.000	3.578	2.416
▽	36-0	2.000	3.576	2.435
◇	36-0	3.006	3.577	2.441



CZ-29-77


SYM RUN YR/DE H/DE ZR/DE
36-0 1.012 3.579 2.410
36-0 0.006 3.584 2.410
36-0 1.000 3.578 2.416
36-0 2.000 3.576 2.435
TEST 711-0
PLOT 035
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-28-77


SYM RUN YR/DE H/DE ZR/DE
36-0 2.155 3.580 2.410
36-0 1.168 3.573 2.410
36-0 0.161 3.584 2.410
36-0 0.845 3.578 2.416
36-0 1.845 3.576 2.435
36-0 2.851 3.577 2.441
TEST 711-0
PLOT 036
FORM 06
0.90
0.80
0.70
0.60
TIR
0.50
0.40
0.30
0.20
0.10
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2.00
1.00
0.00
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2.00
3.00
4.00
XRT/DE
06-28-77

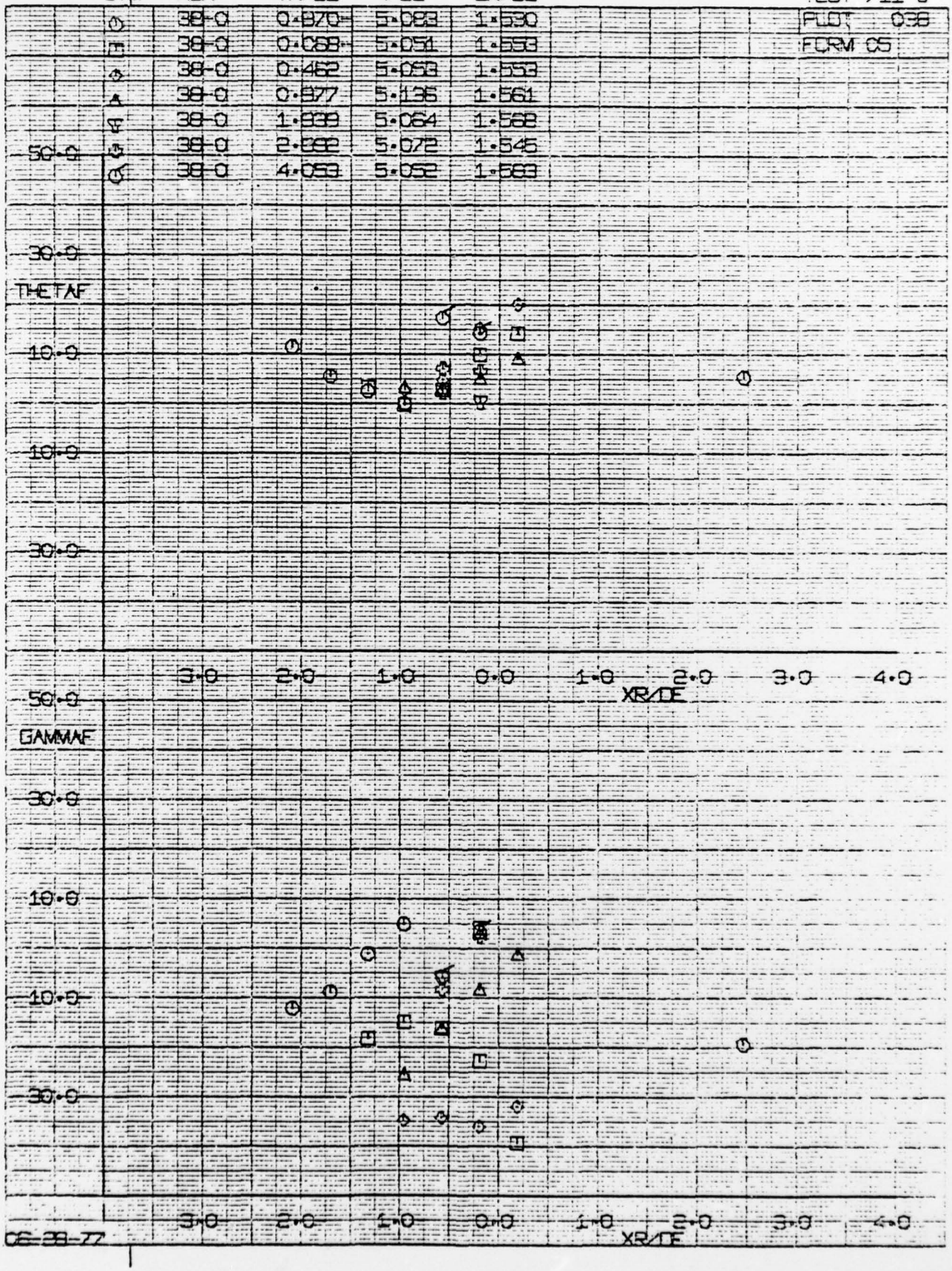

SYM RUN YR/DE H/DE ZR/DE
38-0 0.970 5.083 1.530
38-0 0.068 5.051 1.553
38-0 0.462 5.053 1.553
38-0 0.977 5.136 1.561
38-0 1.939 5.084 1.568
38-0 2.982 5.072 1.545
38-0 4.053 5.052 1.583
TEST 711-0
PLOT 038
FORM 04
MASF
LB SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
θFV
PSI
XS/DE
7-29-77

TEST 711-0

PLOT 038

FORM 05

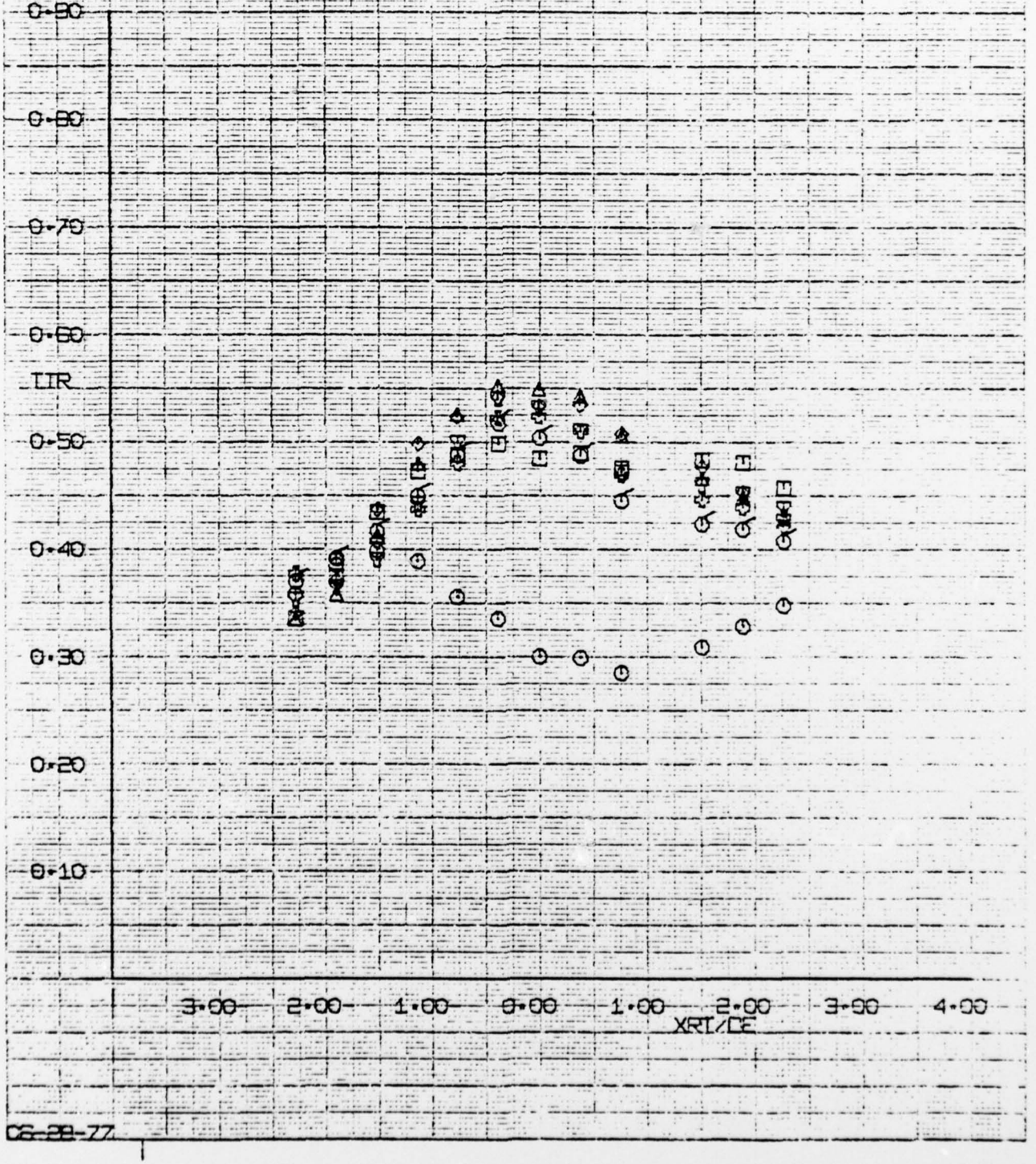
SYM	RUN	YR/DE	H/DE	ZR/DE
○	38-0	0.870	5.083	1.530
□	38-0	0.088	5.051	1.553
◇	38-0	0.462	5.053	1.553
△	38-0	0.977	5.136	1.561
▽	38-0	1.939	5.064	1.562
◁	38-0	2.882	5.072	1.545
⬠	38-0	4.053	5.052	1.563



CE-38-77

SYM	RUN	YR/DE	H/DE	ZR/DE
○	38-0	1.138-	5.083	1.530
□	38-0	0.258-	5.051	1.553
◇	38-0	0.273	5.053	1.553
△	38-0	0.788	5.136	1.561
▽	38-0	1.750	5.064	1.568
⊲	38-0	2.903	5.072	1.545
⊳	38-0	3.664	5.052	1.563

TEST 711-C
PLOT C3S
FORM C6



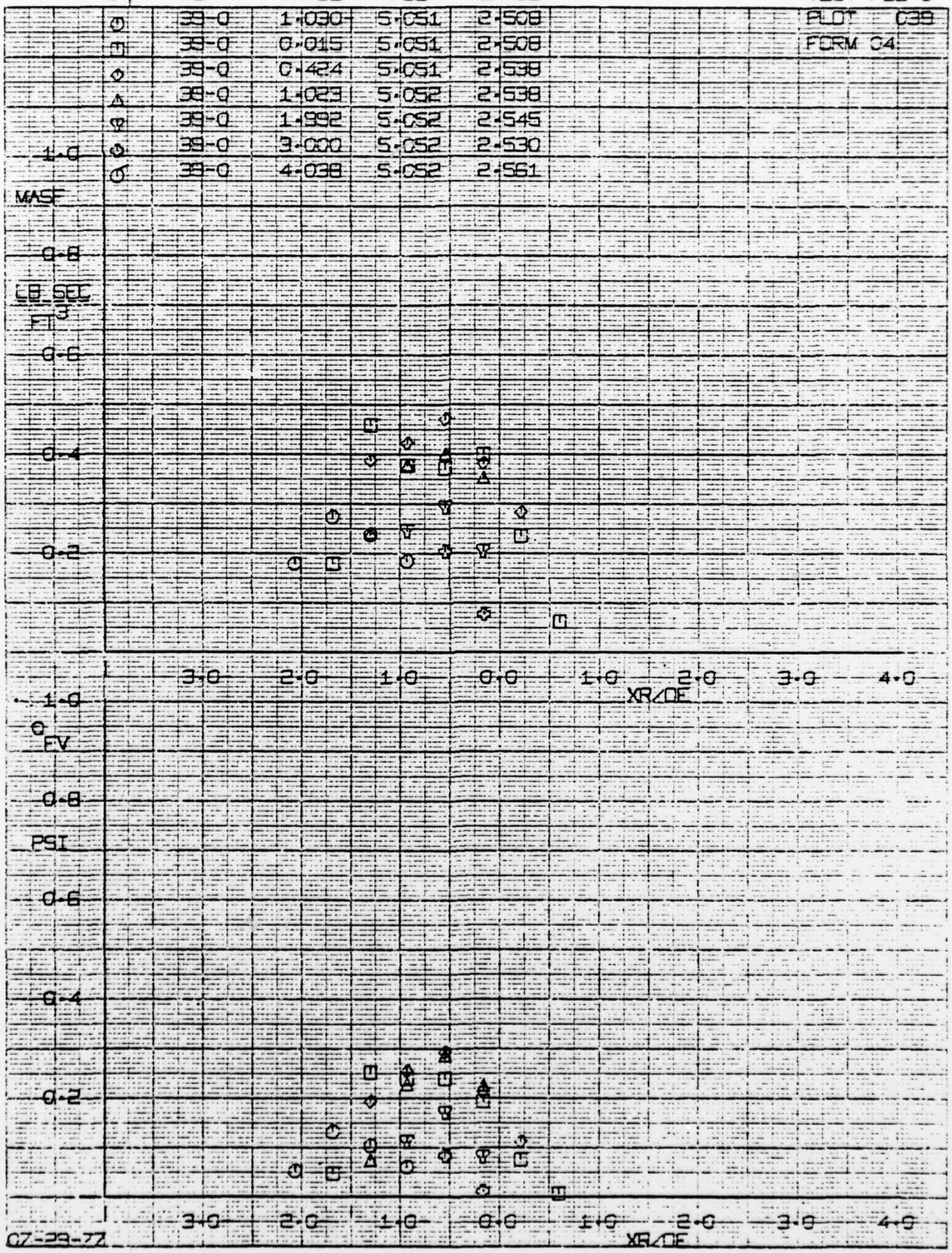
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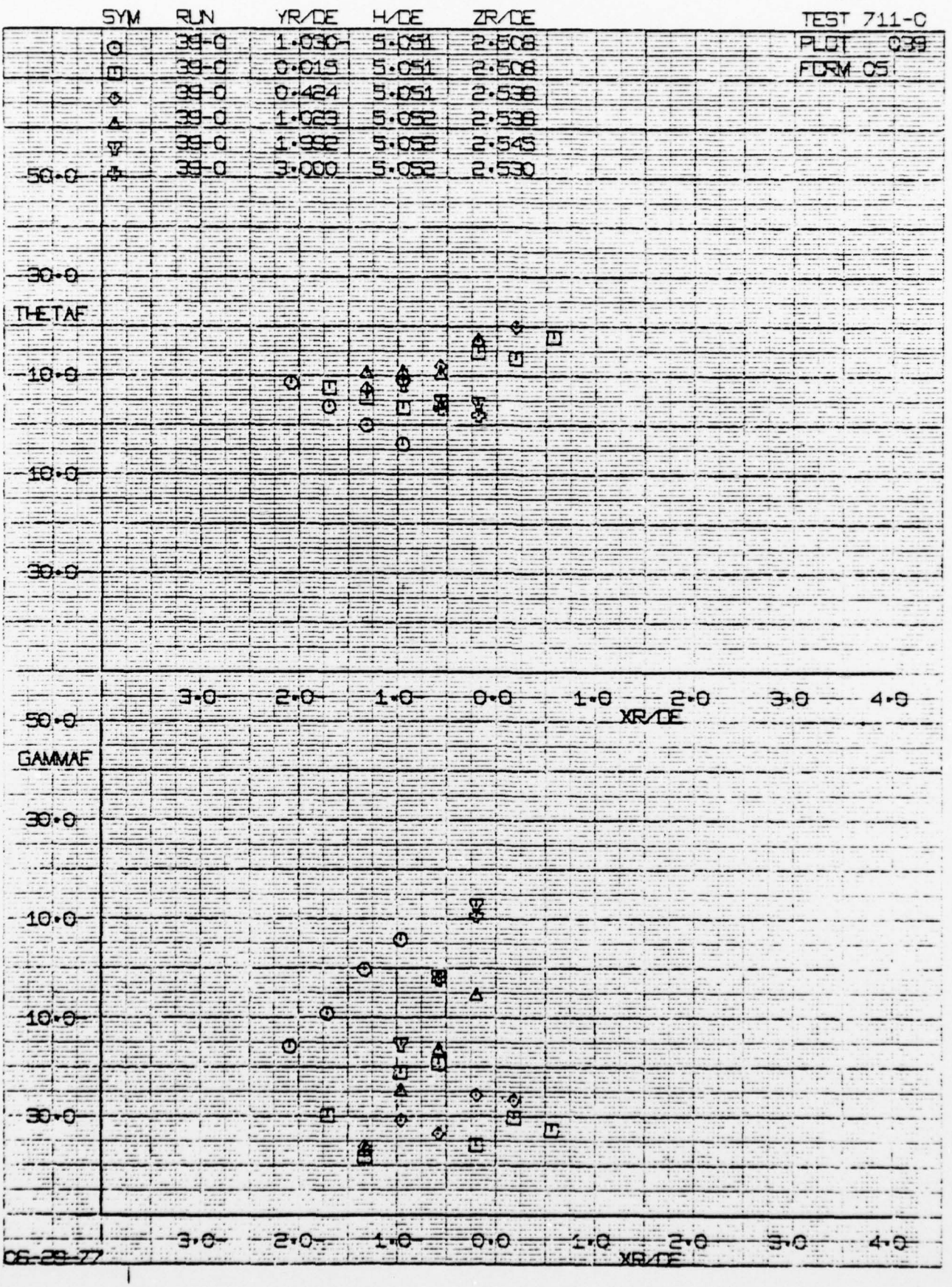
TEST 711-0

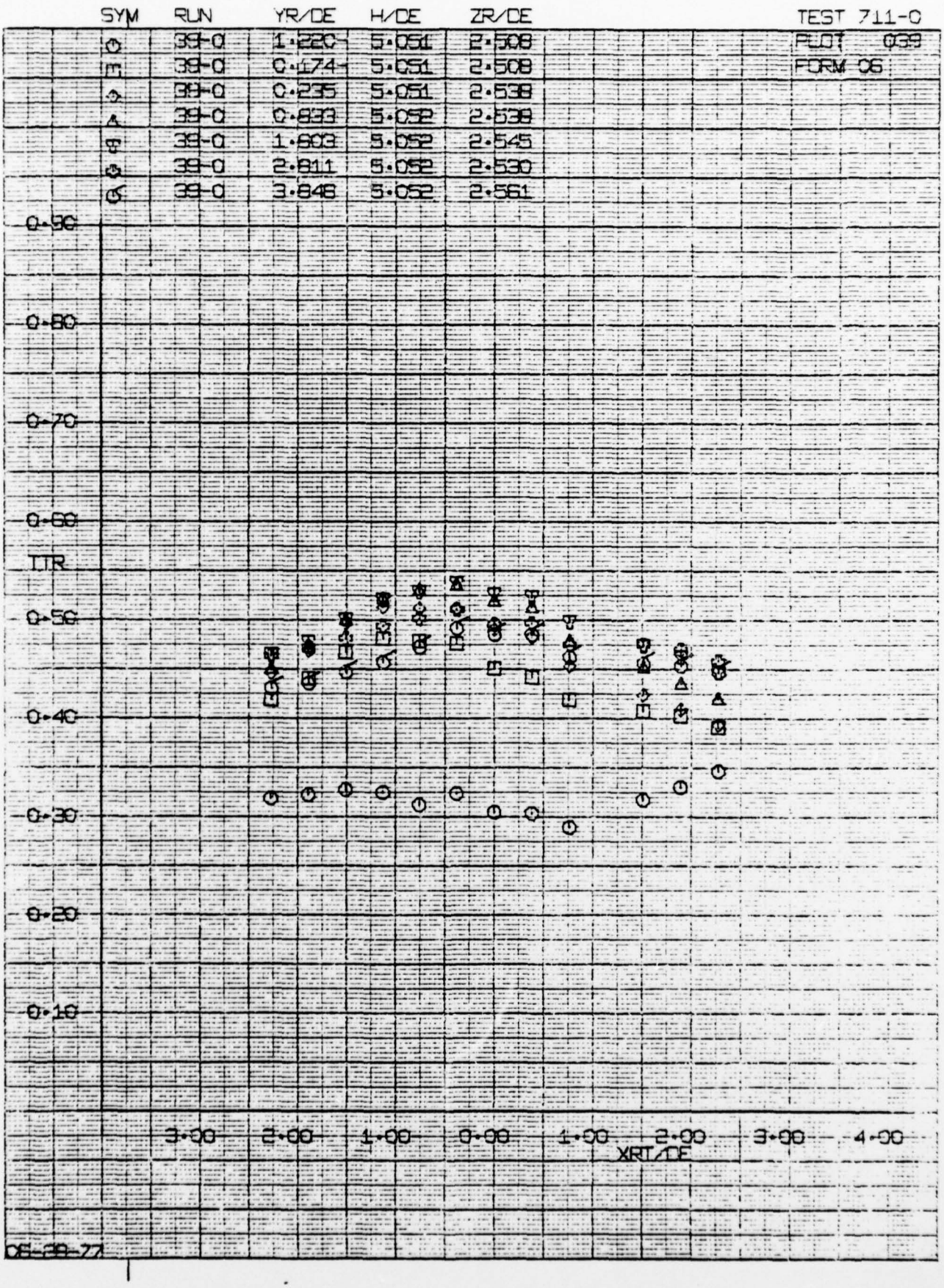
PLOT C39

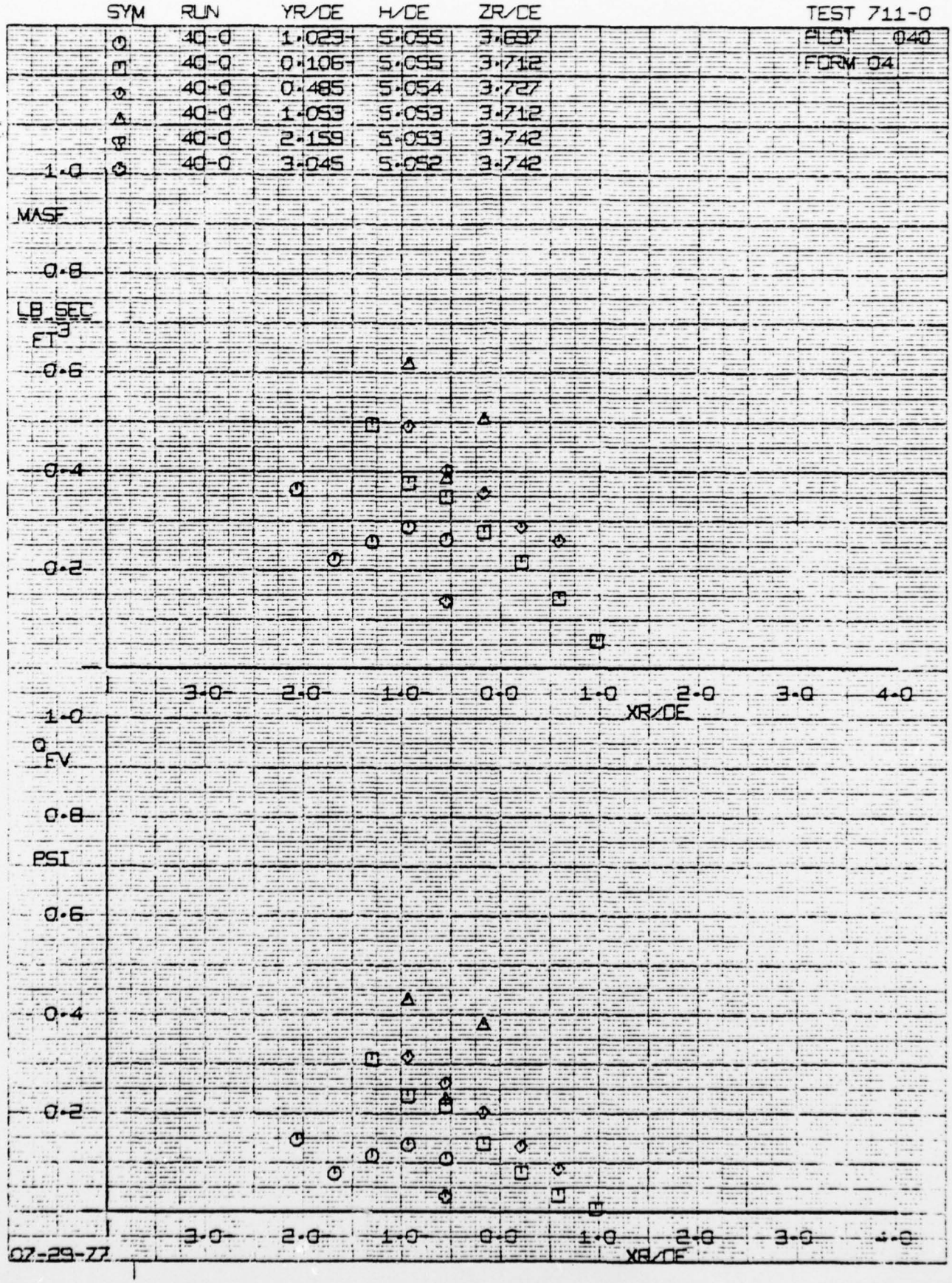
FORM C4

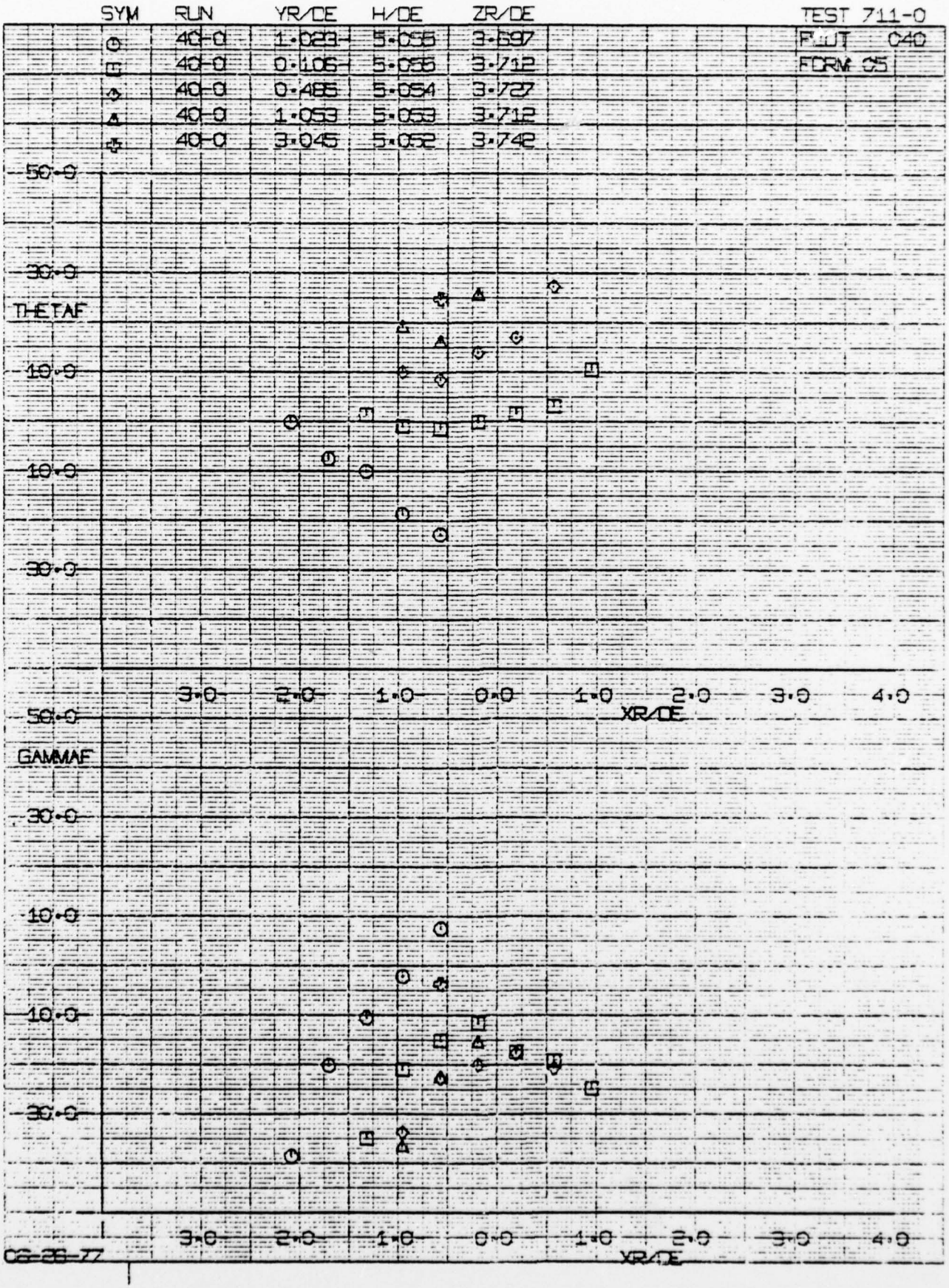
SYM	RUN	YR/CE	H/CE	ZR/CE
○	39-0	1.030	5.051	2.508
□	39-0	0.015	5.051	2.508
◇	39-0	0.424	5.051	2.538
△	39-0	1.023	5.052	2.538
▽	39-0	1.992	5.052	2.545
⊙	39-0	3.000	5.052	2.530
⊡	39-0	4.038	5.052	2.561

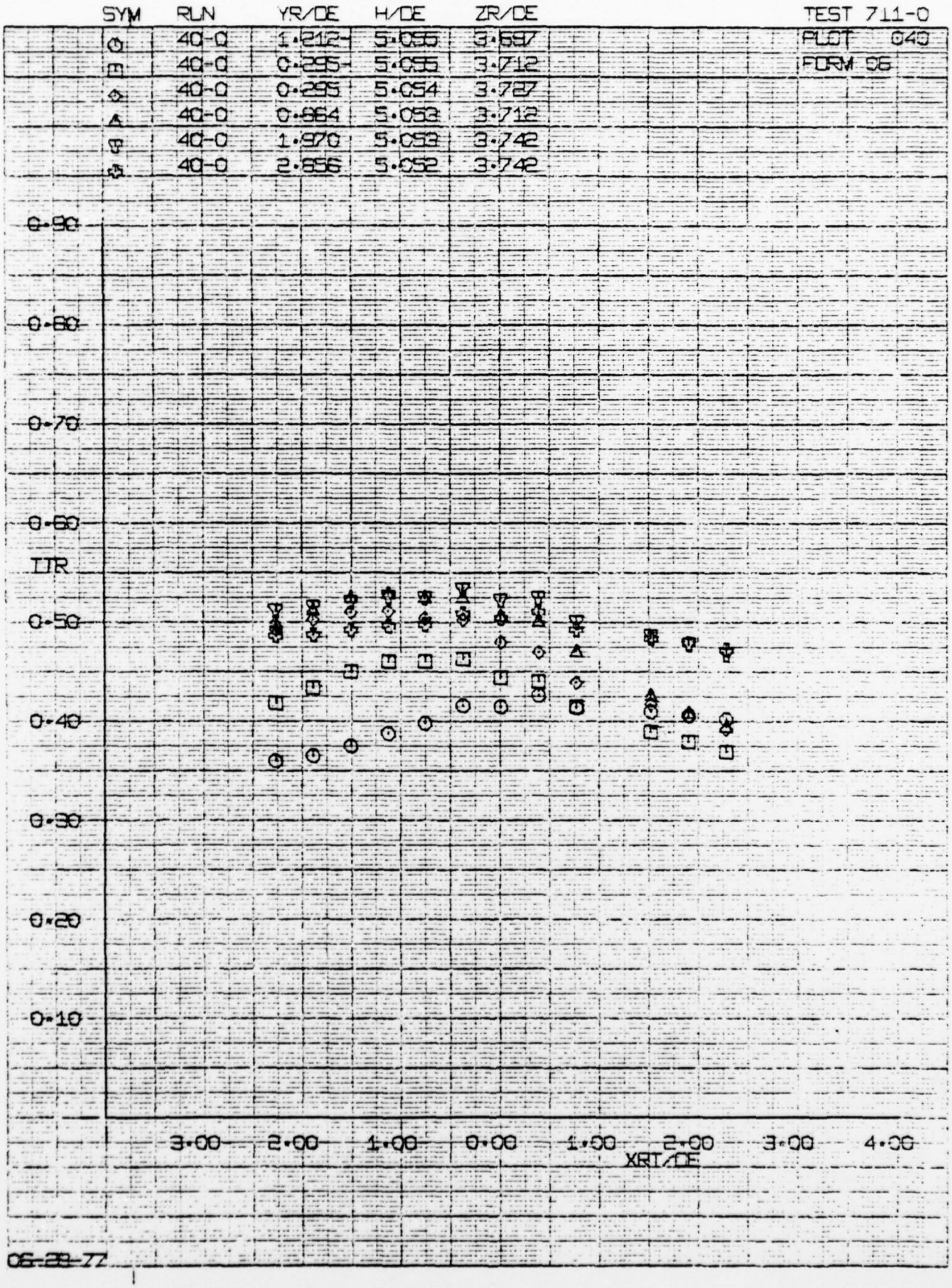



SYM RUN YR/DE H/DE ZR/DE
39-0 1.030- 5.051 2.508
39-0 0.015 5.051 2.508
39-0 0.424 5.051 2.538
39-0 1.023 5.052 2.538
39-0 1.992 5.052 2.545
39-0 3.000 5.052 2.530
TEST 711-C
PLOT 039
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-28-77


SYM RUN YR/DE H/DE ZR/DE
39-0 1.220 5.051 2.508
39-0 0.174 5.051 2.508
39-0 0.235 5.051 2.538
39-0 0.833 5.052 2.538
39-0 1.803 5.052 2.545
39-0 2.811 5.052 2.530
39-0 3.848 5.052 2.561
TEST 711-0
PLOT 039
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
05-29-77

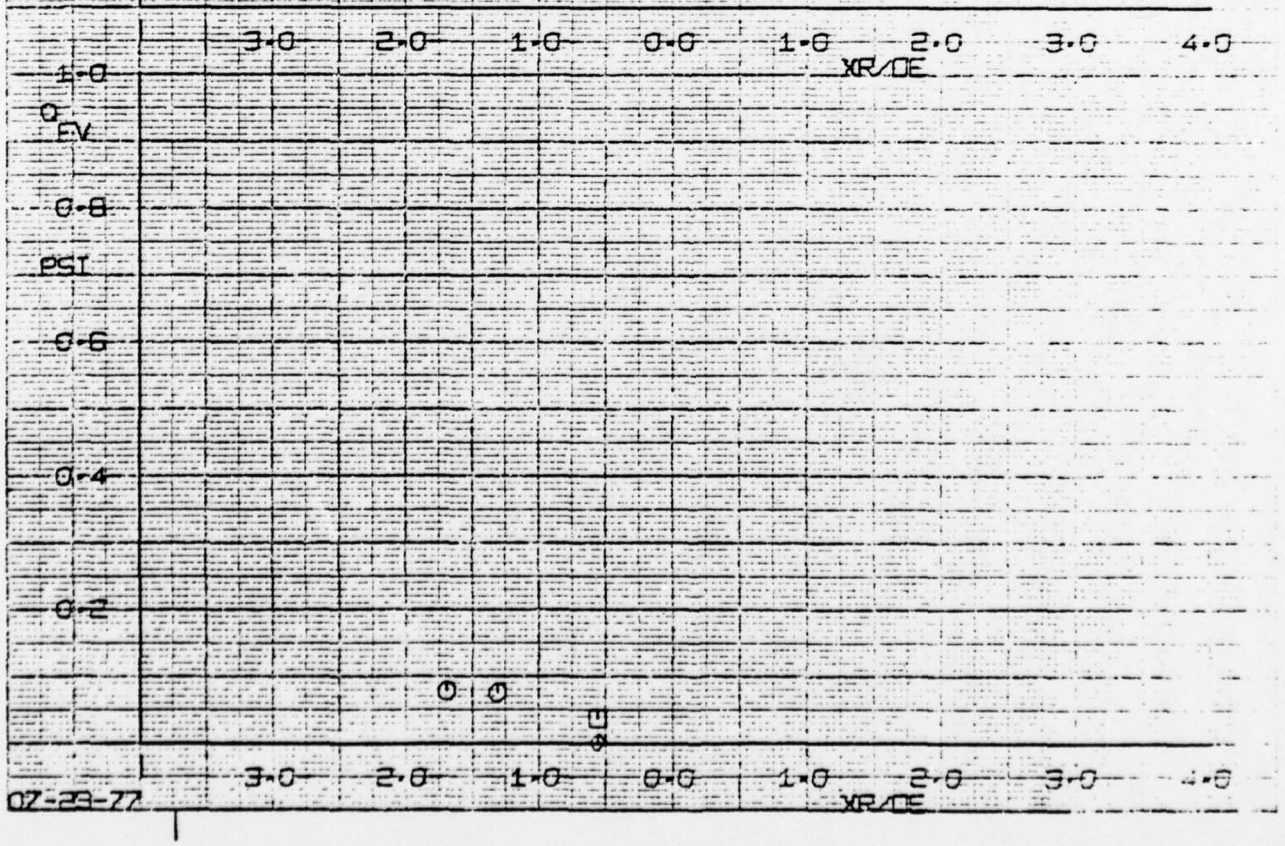

SYM RUN YR/DE H/DE ZR/DE
40-0 1.023 5.055 3.687
40-0 0.106 5.055 3.712
40-0 0.485 5.054 3.727
40-0 1.053 5.053 3.712
40-0 2.159 5.053 3.742
40-0 3.045 5.052 3.742
TEST 711-0
PLOT 040
FORM 04
MASF
LB SEC
FT3
XR/DE
Q
EV
PSI
07-29-77


SYM RUN YR/DE H/DE ZR/DE
40-0 1.023 5.055 3.697
40-0 0.106 5.055 3.712
40-0 0.485 5.054 3.727
40-0 1.053 5.053 3.712
40-0 3.045 5.052 3.742
TEST 711-0
FLUT 040
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-26-77

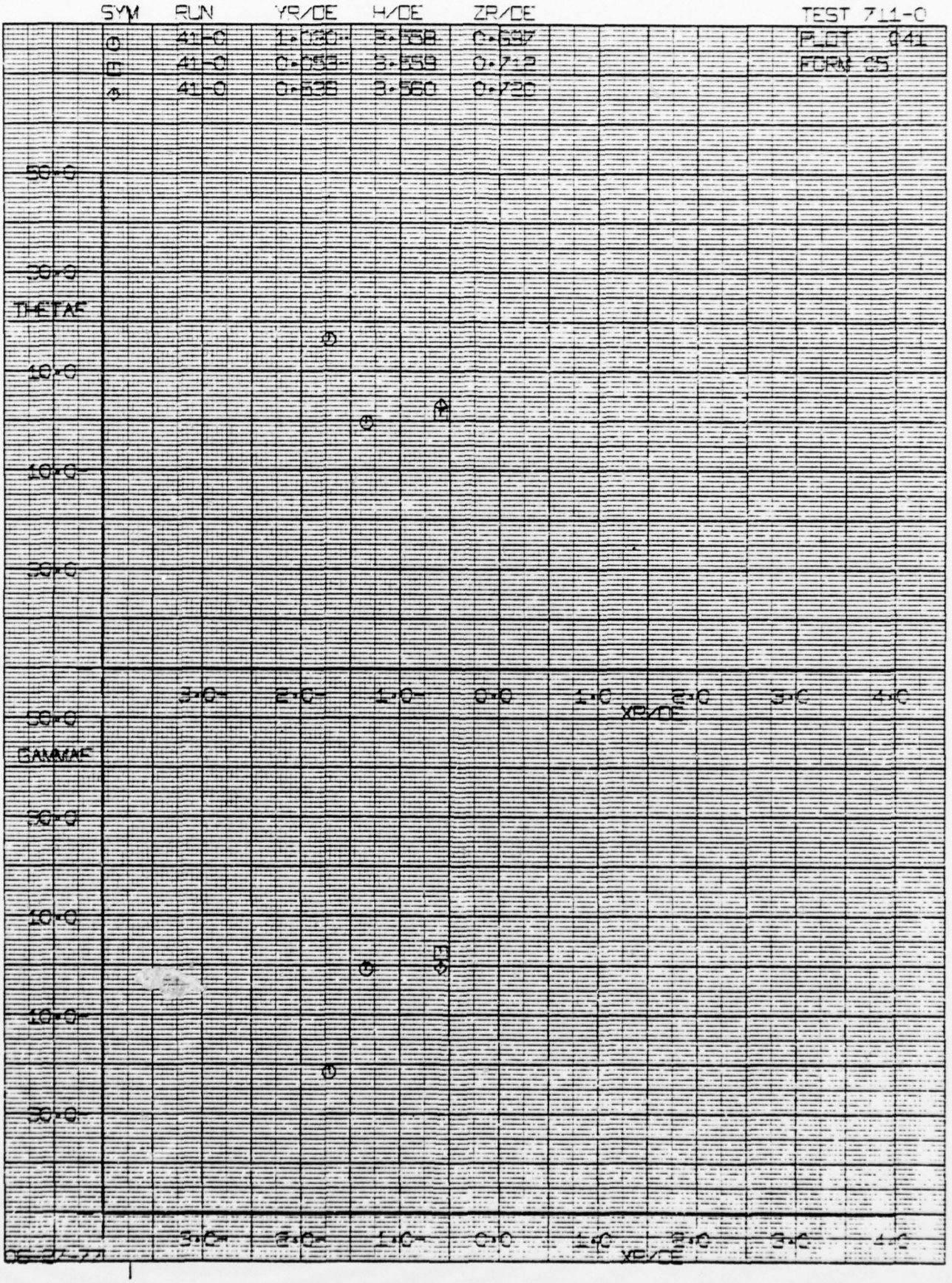

SYM RUN YR/DE H/DE ZR/DE
40-0 1.212 5.055 3.697
40-0 0.295 5.055 3.712
40-0 0.295 5.054 3.727
40-0 0.664 5.053 3.712
40-0 1.970 5.053 3.742
40-0 2.856 5.052 3.742
TEST 711-0
PLOT 040
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-28-77

SYM	RUN	YR/DE	H/DE	ZR/DE
○	41-0	1.030	3.558	0.697
□	41-0	0.053	3.559	0.712
◇	41-0	0.536	3.560	0.720
△	41-0	1.000	3.563	0.720

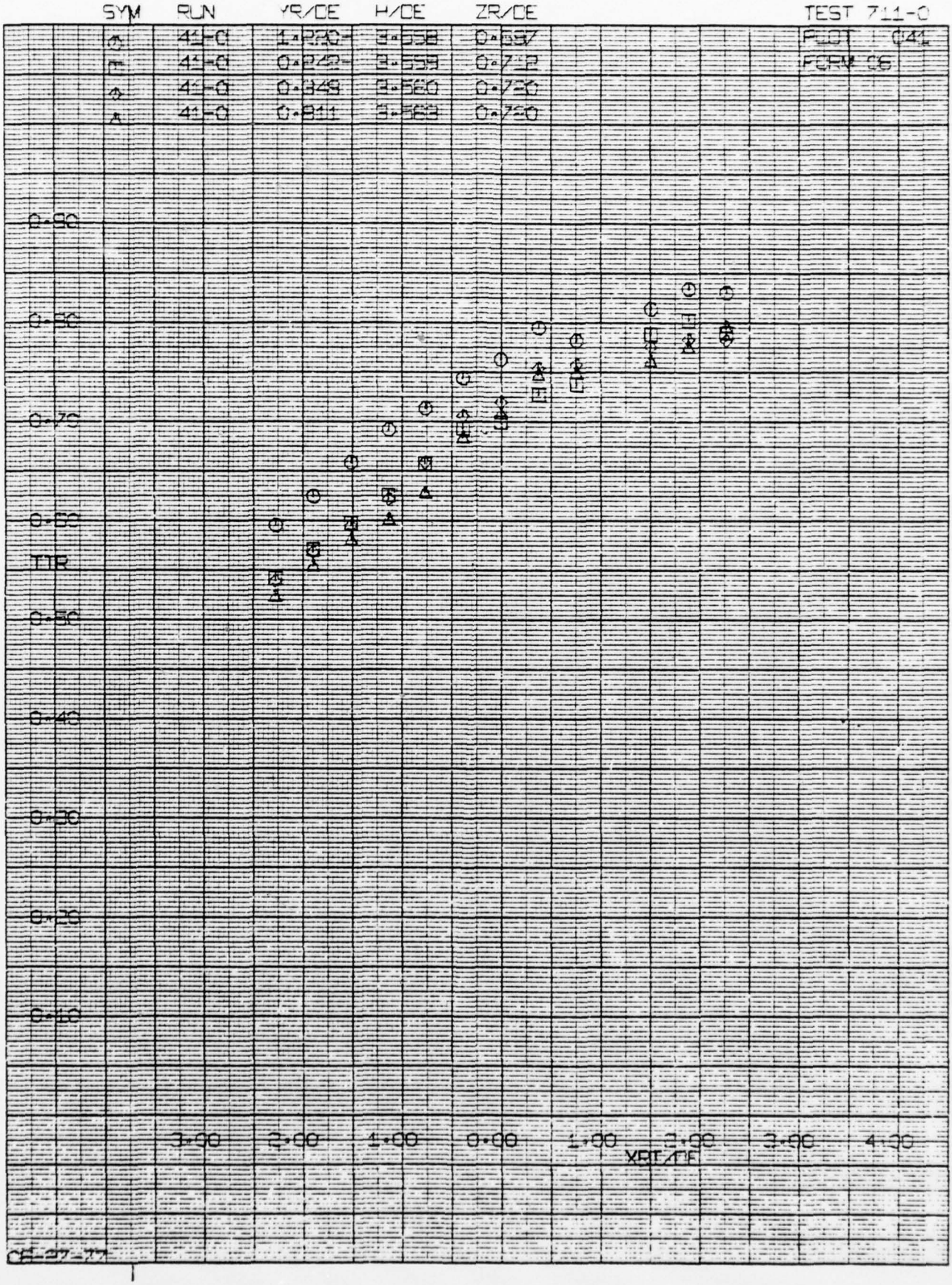
TEST 711-0
PLOT 041
FORM 04



07-23-77

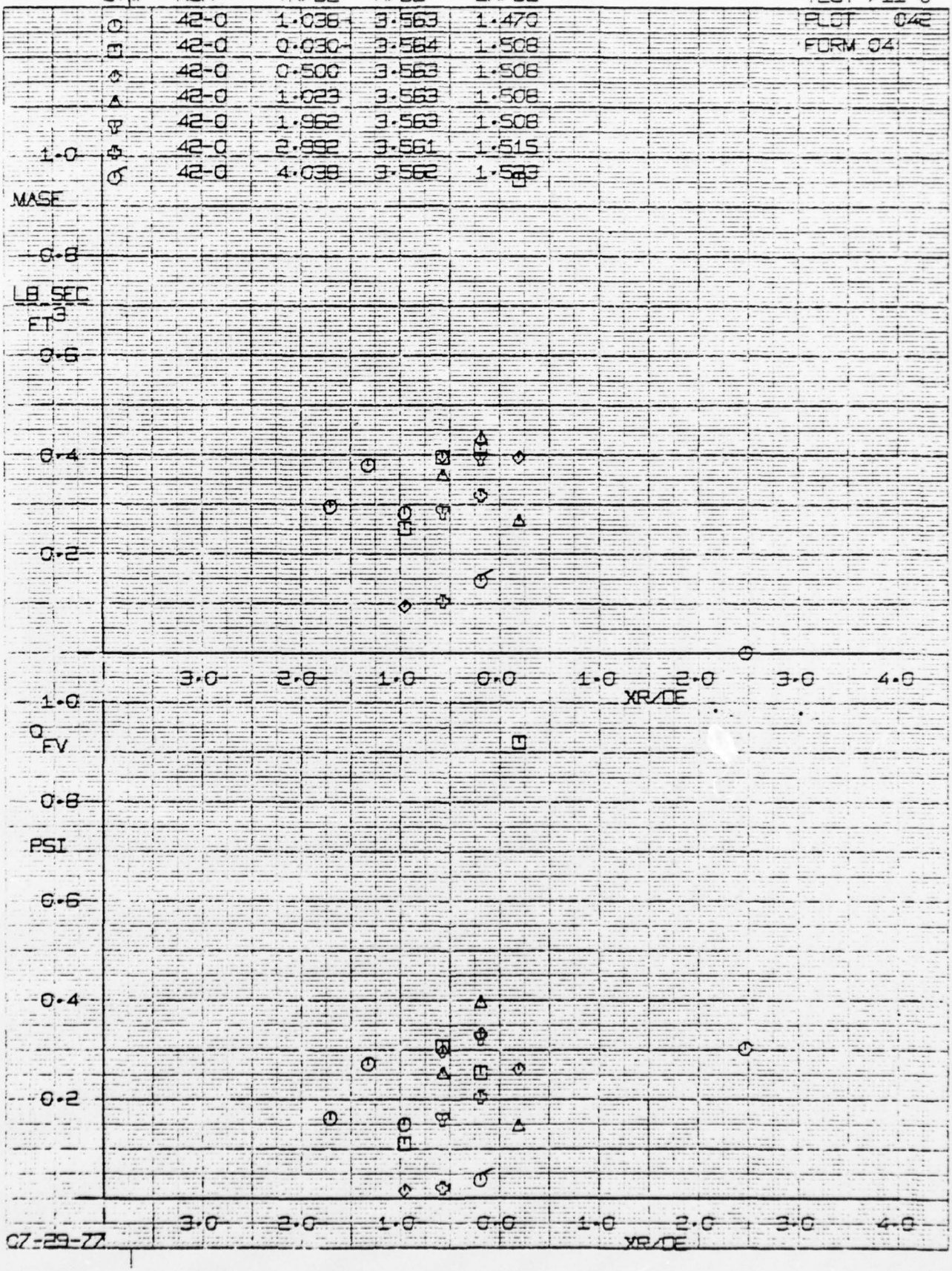

SYM RUN YR/DE H/DE ZR/DE
41-0 1.030- 3.558 0.697
41-0 0.953- 3.559 0.712
41-0 0.838 3.560 0.720
TEST 711-0
PLOT 941
FORM 65
50.0
30.0
THETAE
10.0
10.0-
30.0
50.0
GAMMAE
30.0
10.0
10.0-
30.0-
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XP/DE
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XP/DE

012


SYM RUN YR/CE H/CE ZR/CE
41-0 1.220- 3.538 0.697
41-0 0.242- 3.559 0.712
41-0 0.349 3.560 0.720
41-0 0.811 3.563 0.750
TEST 711-0
PLOT 041
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XBT/TE
CE-27-77

TEST 711-0
PLOT 042
FORM 04

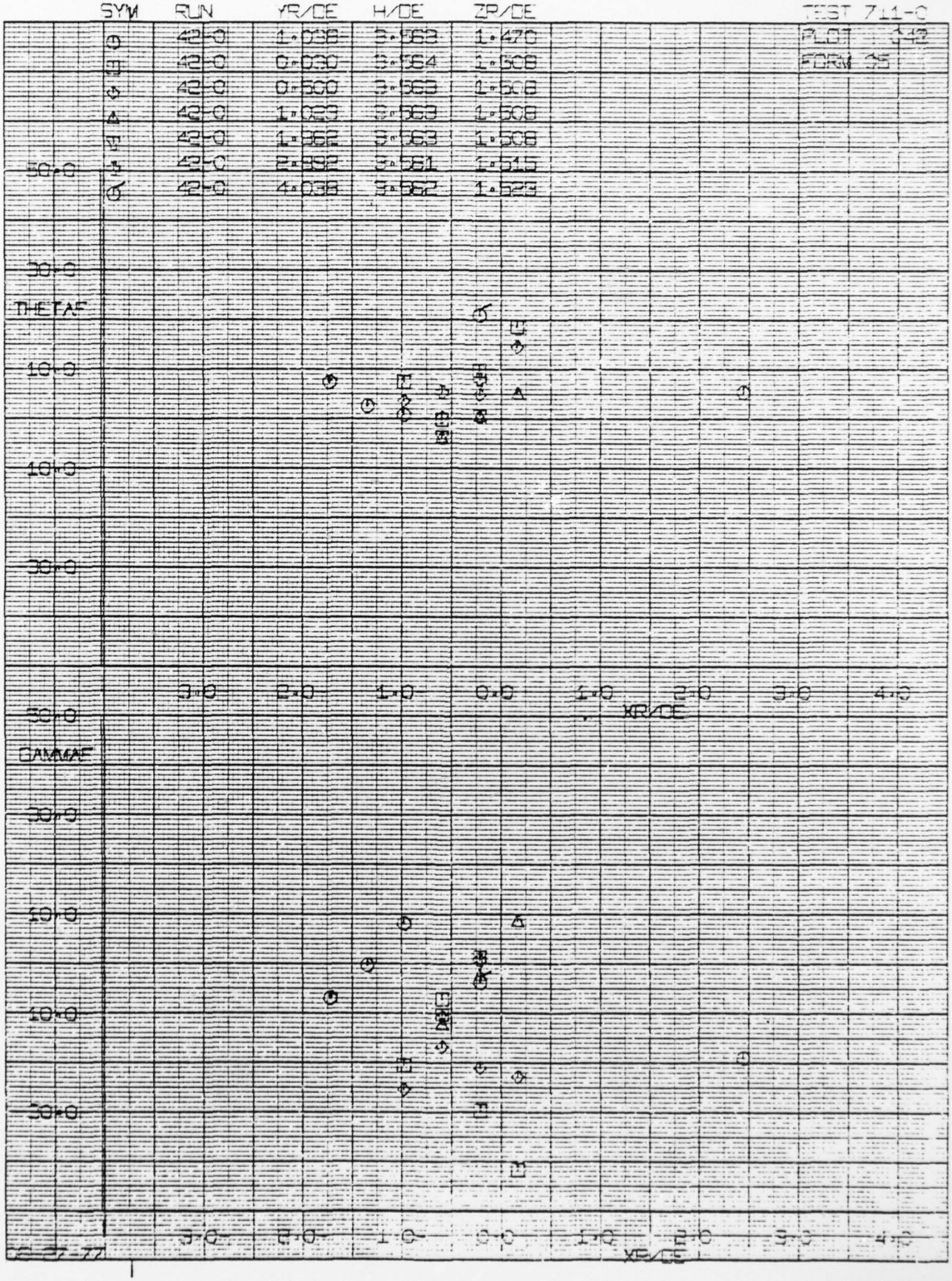
SYM	RUN	YR/DE	H/DE	ZR/DE
○	42-0	1.036	3.563	1.470
□	42-0	0.030	3.564	1.508
◇	42-0	0.500	3.563	1.508
△	42-0	1.023	3.563	1.508
▽	42-0	1.962	3.563	1.508
⊕	42-0	2.992	3.561	1.515
⊙	42-0	4.038	3.562	1.523



107

SYM	RUN	YR/DE	H/DE	ZP/DE
○	42-0	1.038	3.563	1.470
□	42-0	0.030	3.564	1.508
◇	42-0	0.500	3.563	1.508
△	42-0	1.023	3.563	1.508
▽	42-0	1.362	3.563	1.508
⊲	42-0	2.892	3.561	1.515
⊳	42-0	4.038	3.562	1.523

TEST 711-0
PLOT 142
FORM 95



012

SYM	RUN	YR/CE	H/CE	ZR/CE
⊙	42-0	1.227	3.563	1.470
□	42-0	0.220	3.564	1.508
◇	42-0	0.811	3.563	1.508
△	42-0	0.833	3.563	1.508
▽	42-0	1.773	3.563	1.508
⊕	42-0	2.803	3.561	1.515
⊗	42-0	3.848	3.562	1.523

TEST 711-0

PLOT Φ42

FORM CE

0.8C

0.5C

0.7C

0.6C

TTP

0.5C

0.4C

0.3C

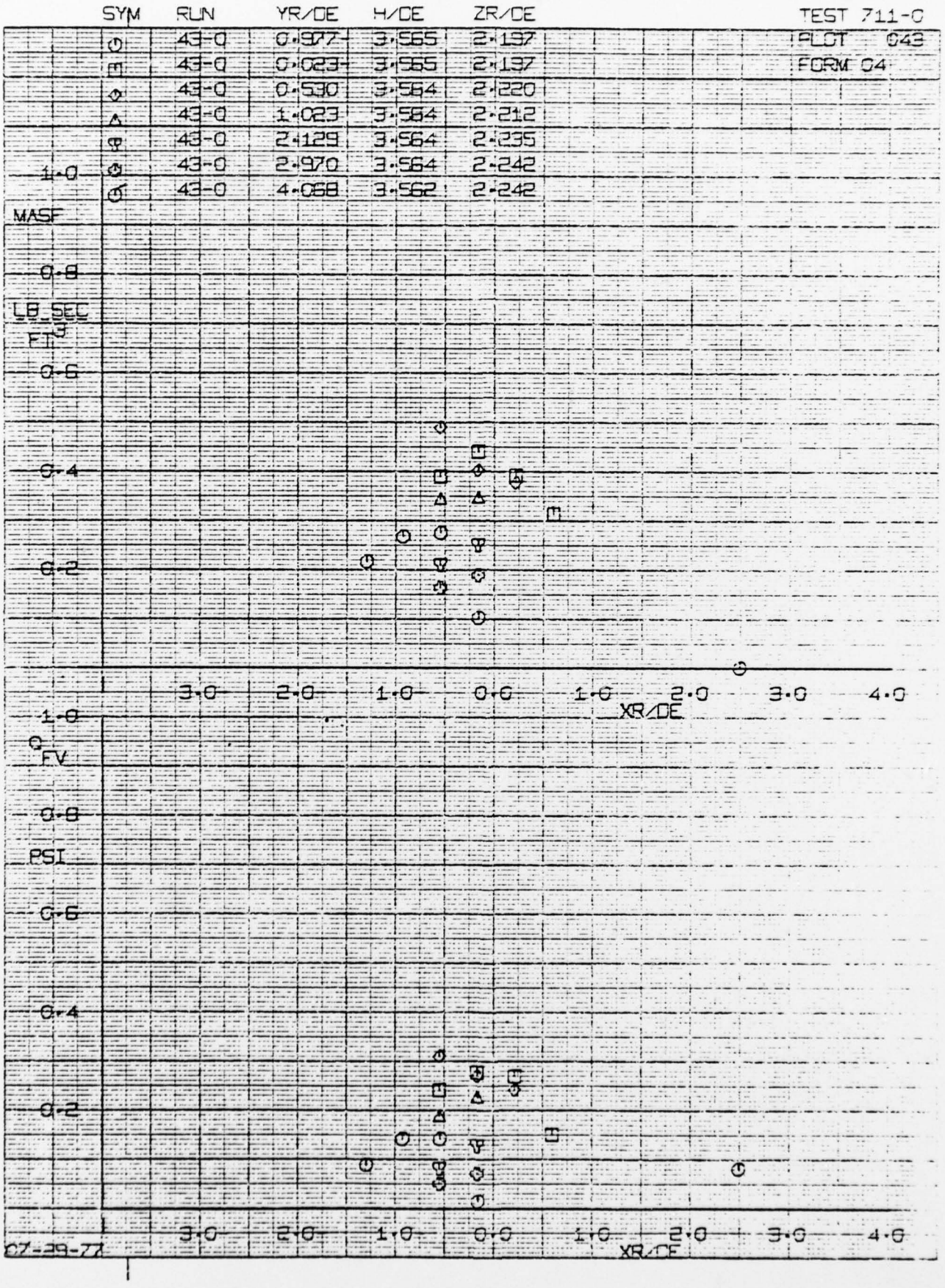
0.2C

0.1C

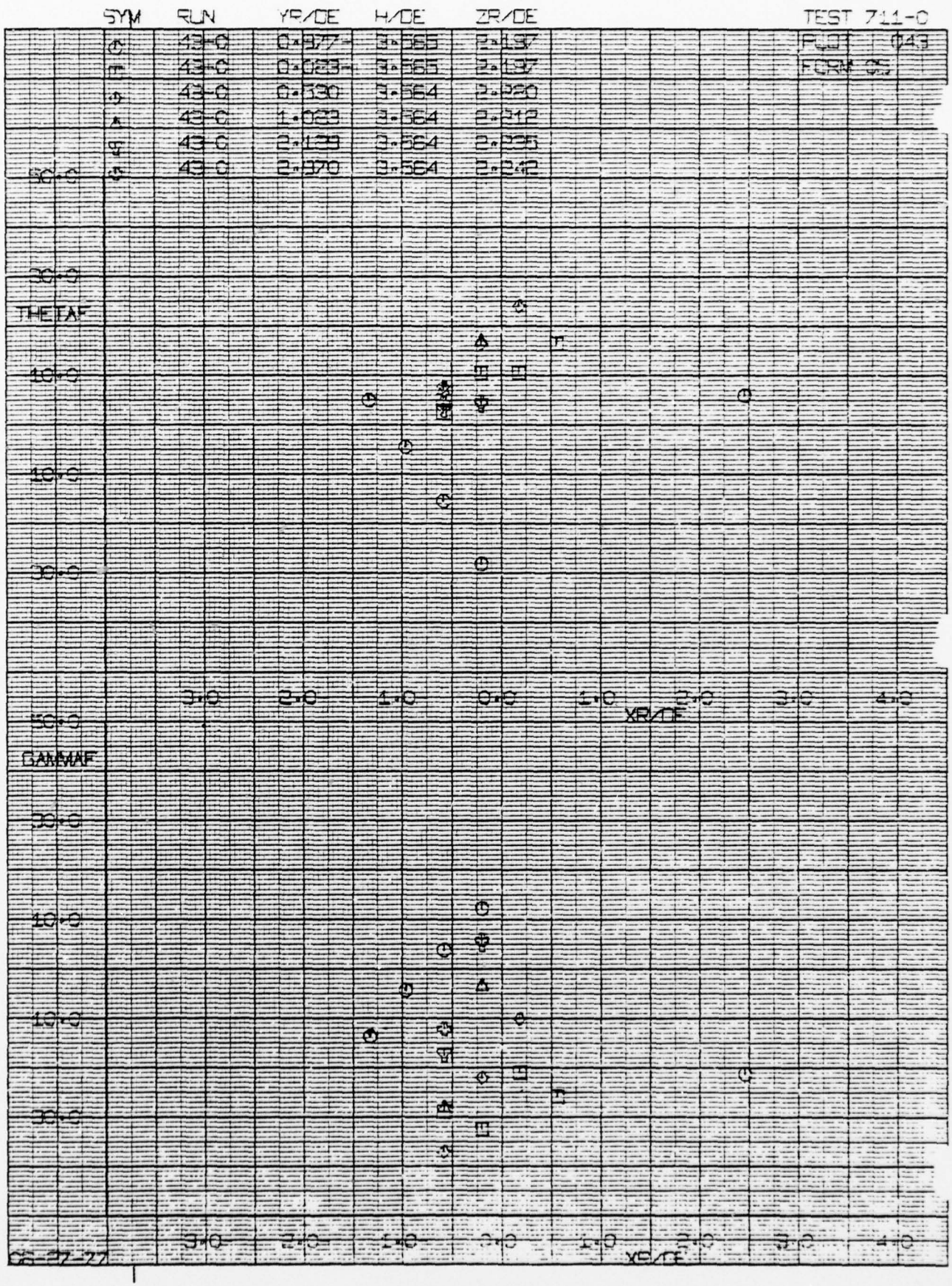
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00

XFT/CE

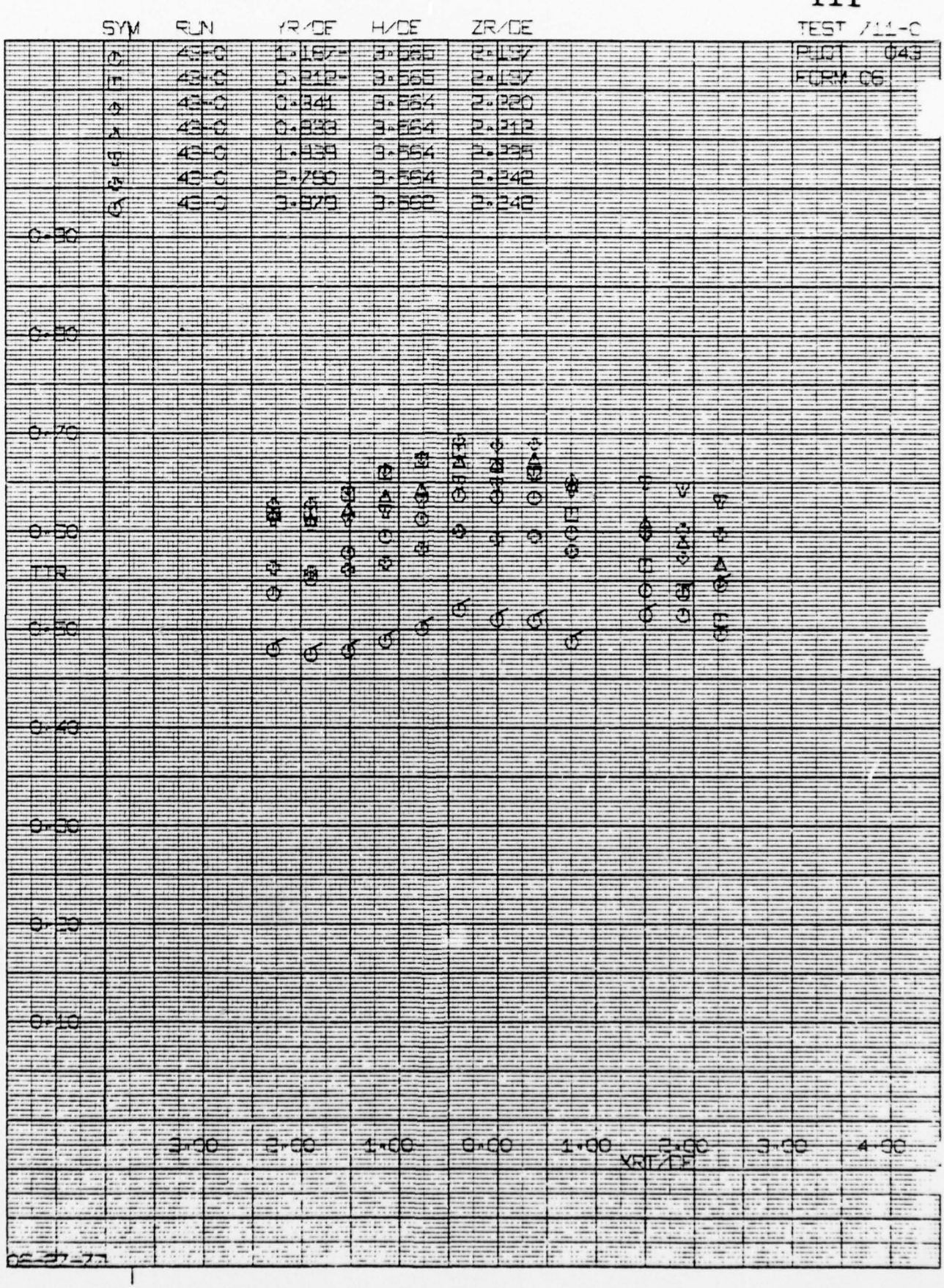
06-27-77


SYM RUN YR/DE H/DE ZR/DE
43-0 0.977 3.565 2.137
43-0 0.023 3.565 2.137
43-0 0.530 3.564 2.220
43-0 1.023 3.564 2.212
43-0 2.129 3.564 2.235
43-0 2.970 3.564 2.242
43-0 4.068 3.562 2.242
TEST 711-C
PLOT 043
FORM 04
MASF
LB_SEC
FT
XR/DE
FV
PSI
07-29-77

012

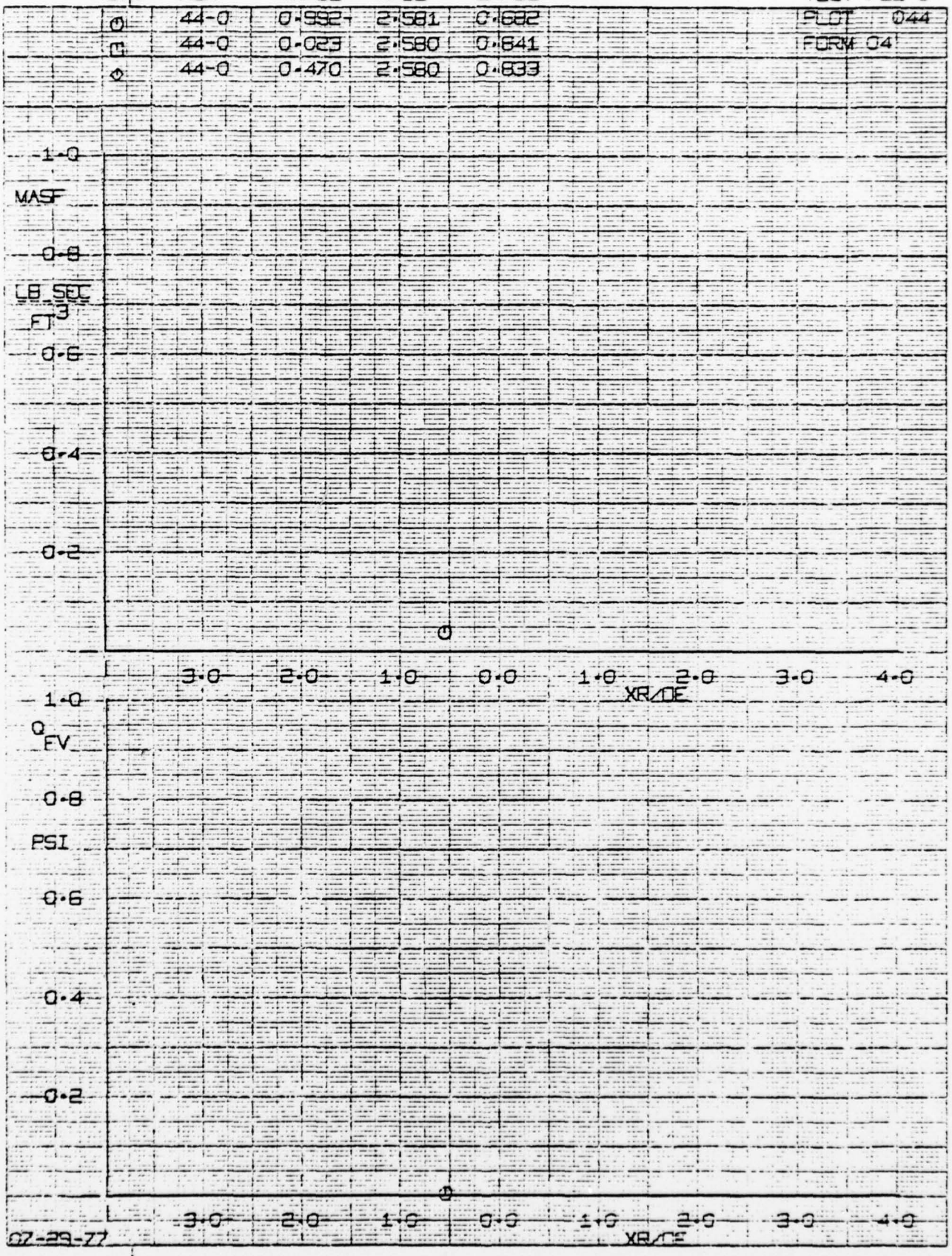

SYM RUN YR/DE H/DE ZR/DE
43-0 0.877 3.565 2.137
43-0 0.823 3.565 2.137
43-0 0.930 3.564 2.220
43-0 1.023 3.564 2.212
43-0 2.133 3.564 2.235
43-0 2.370 3.564 2.242
TEST 711-0
PLOT 043
FORM 05
90.0
30.0
THETAF
10.0
-10.0
-30.0
3.0
2.0
1.0
0.0
1.0
2.0
3.0
4.0
XR/DE
50.0
GAMMAF
30.0
10.0
-10.0
-30.0
3.0
2.0
1.0
0.0
1.0
2.0
3.0
4.0
YC/DE
05-27-27

012

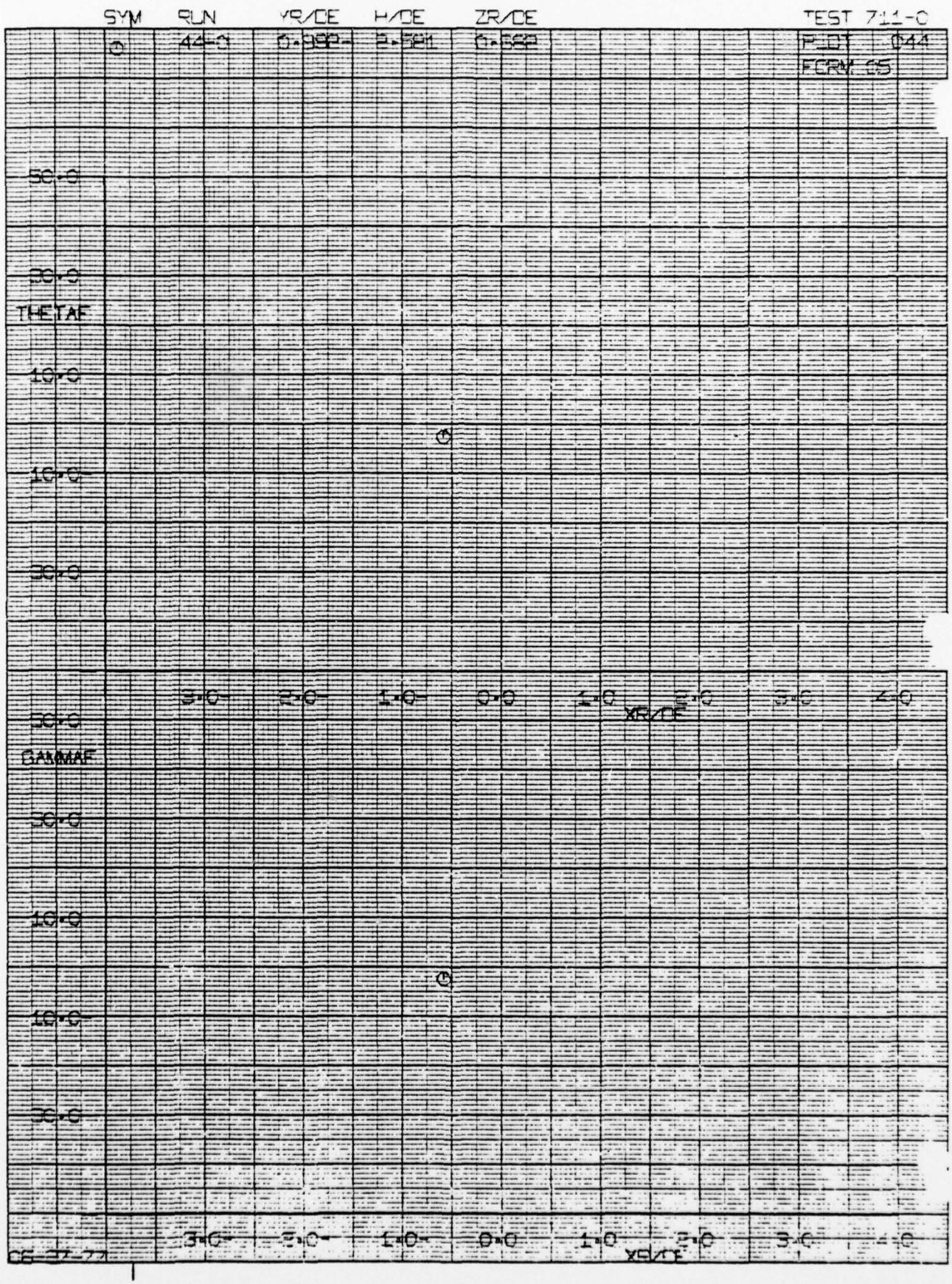

SYM RUN YR/DE H/DE ZR/DE TEST /11-C
43-0 1.187- 3.565 2.137 PILOT 043
43-0 0.212- 3.565 2.137 FORM 06
43-0 0.341 3.564 2.220
43-0 0.838 3.564 2.212
43-0 1.939 3.564 2.235
43-0 2.780 3.564 2.242
43-0 3.879 3.562 2.242
0.90
0.80
0.70
0.60
0.50
TTR
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
VRT/DE
06-27-77

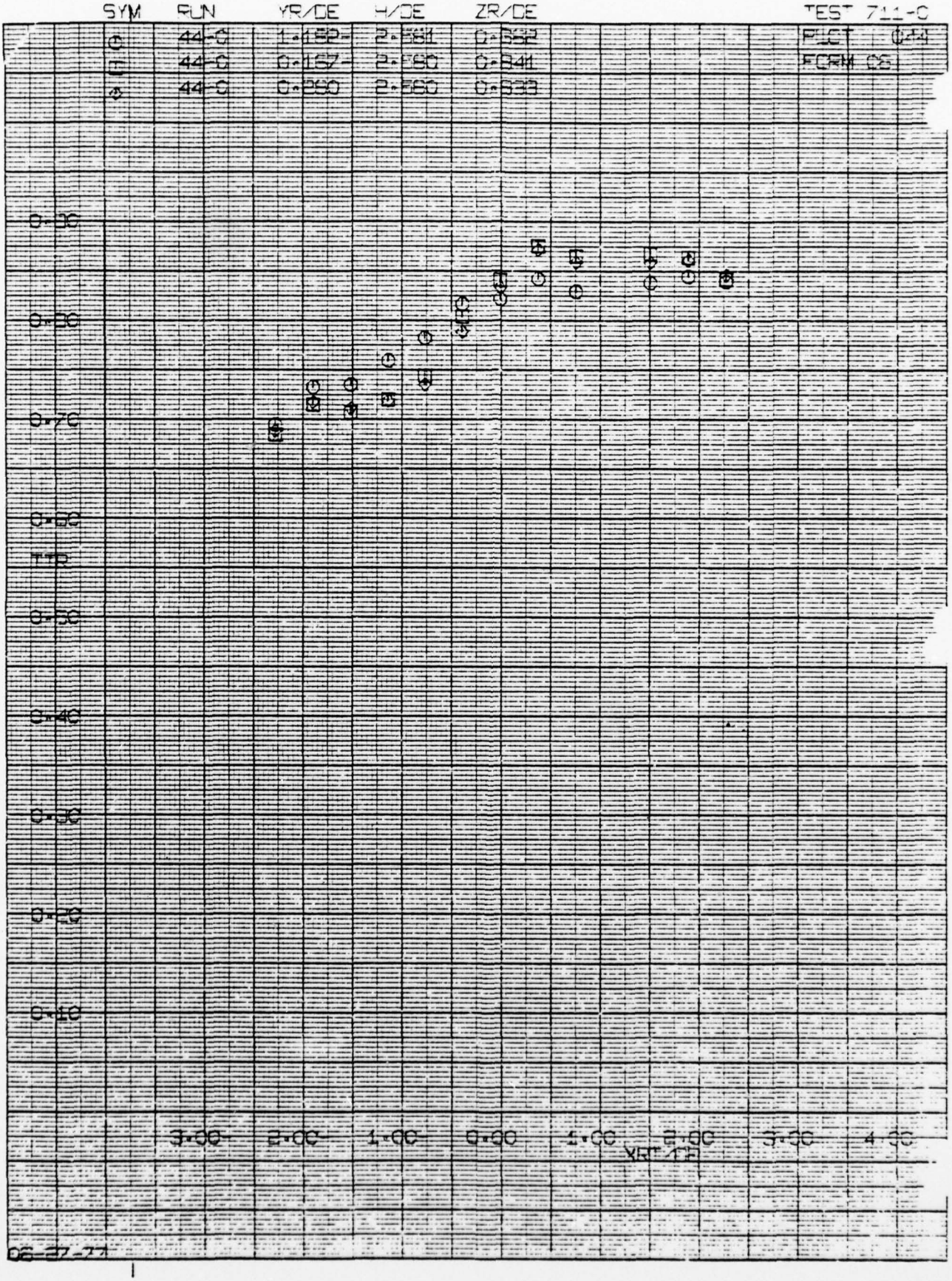
SYM	RUN	YR/DE	H/DE	ZR/DE
○	44-0	0.952	2.581	0.682
□	44-0	0.023	2.580	0.641
◇	44-0	0.470	2.580	0.833

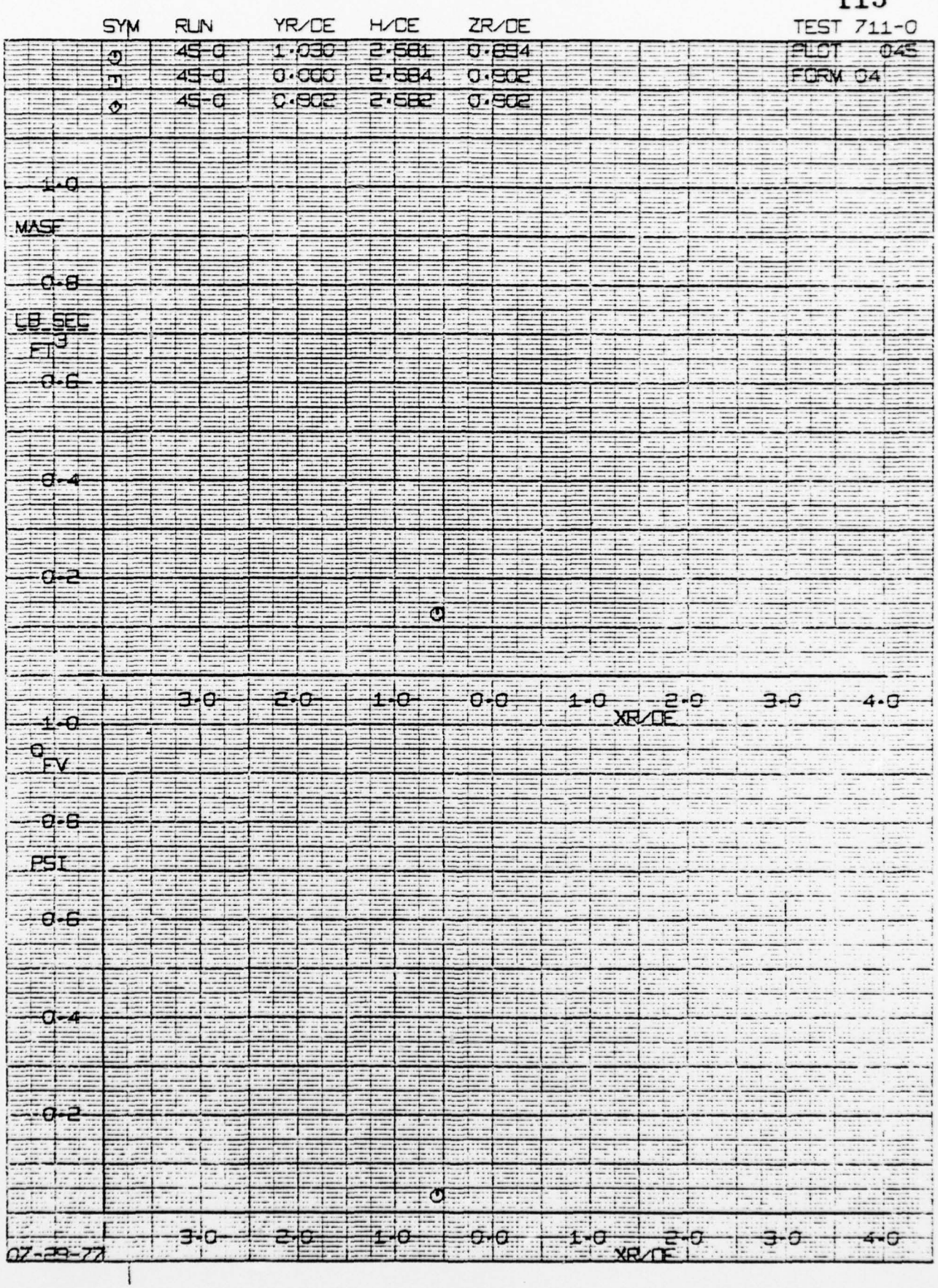
TEST 711-0
PLOT 044
FORM 04

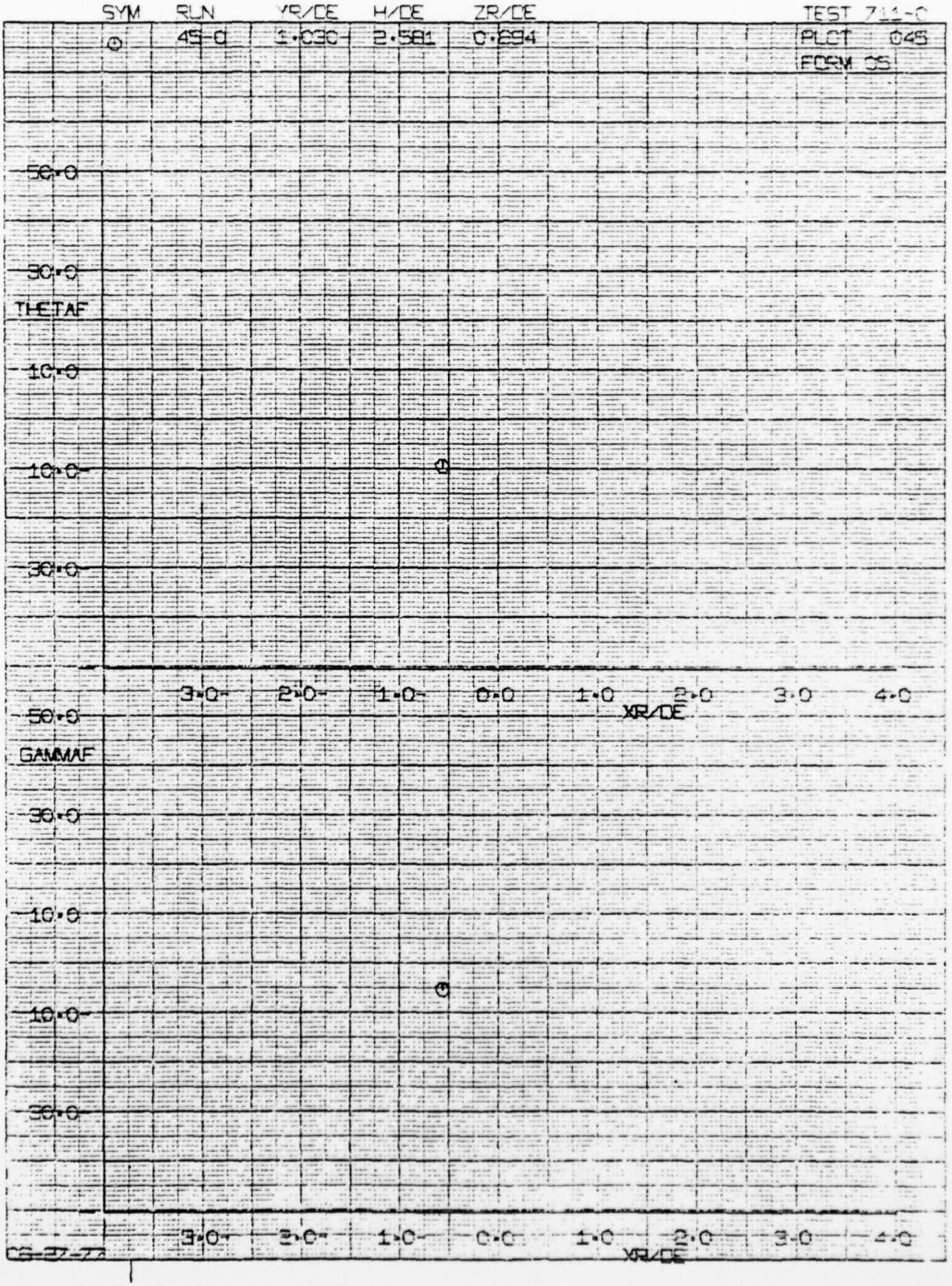


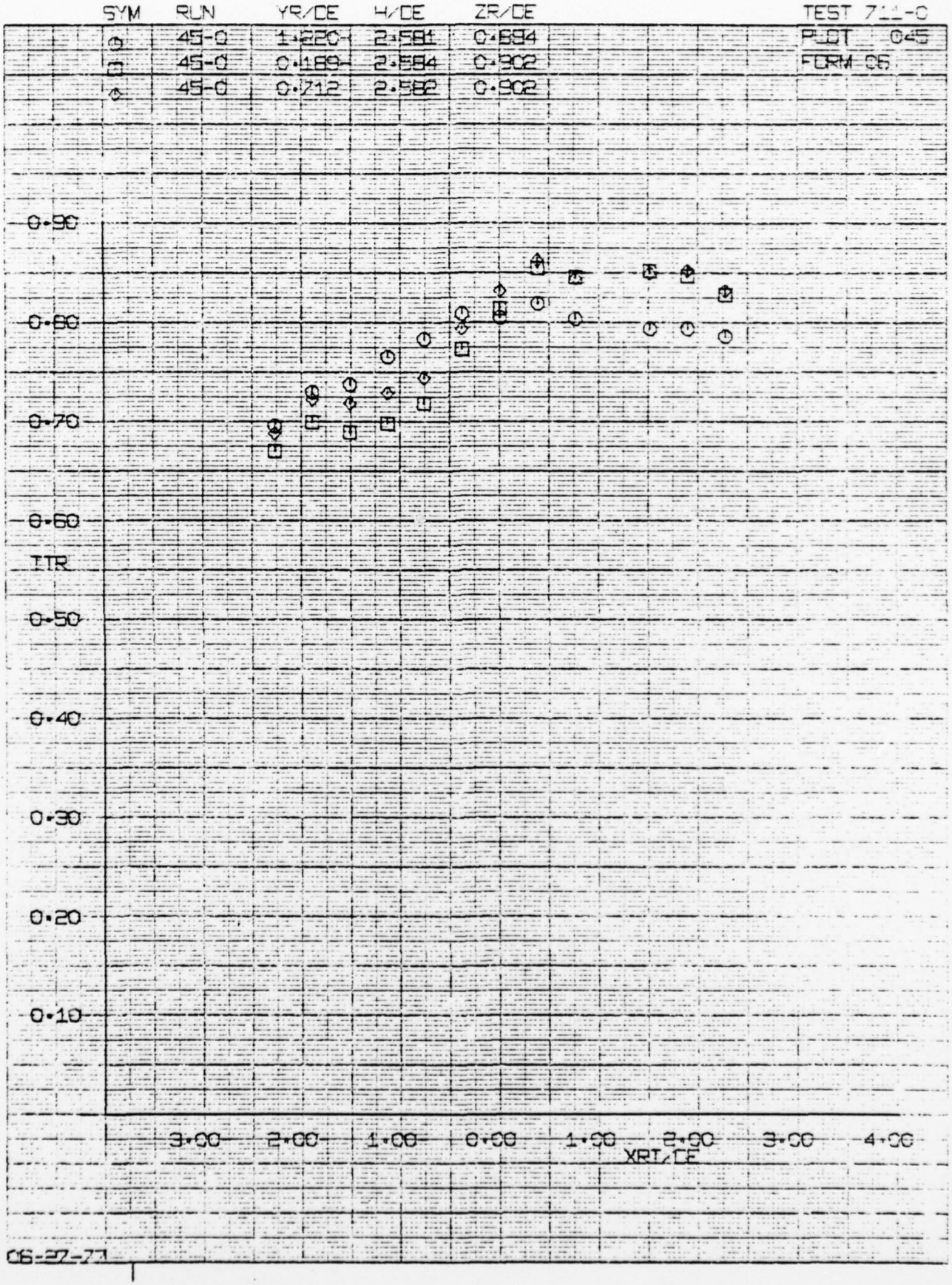
012

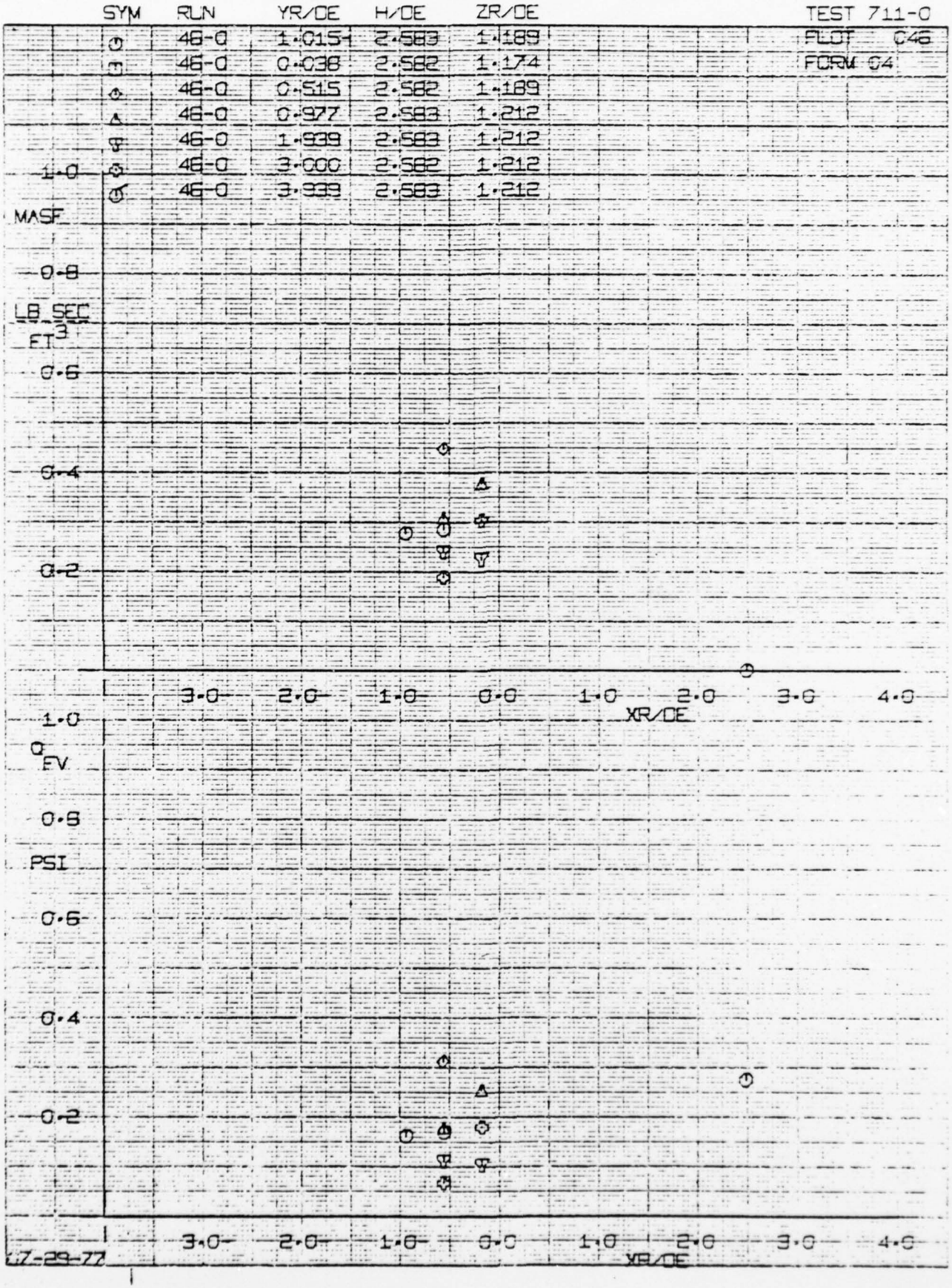

SYM RUN YR/DE H/DE ZR/DE TEST 711-0
44-0 0.382- 2.581 0.682
F-DT 044
FORM 65
50.0
30.0
THETAF
10.0
10.0-
30.0
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0-
30.0
3.0- 2.0- 1.0- 0.0 1.0 2.0 3.0 4.0
YR/DE
05-27-77

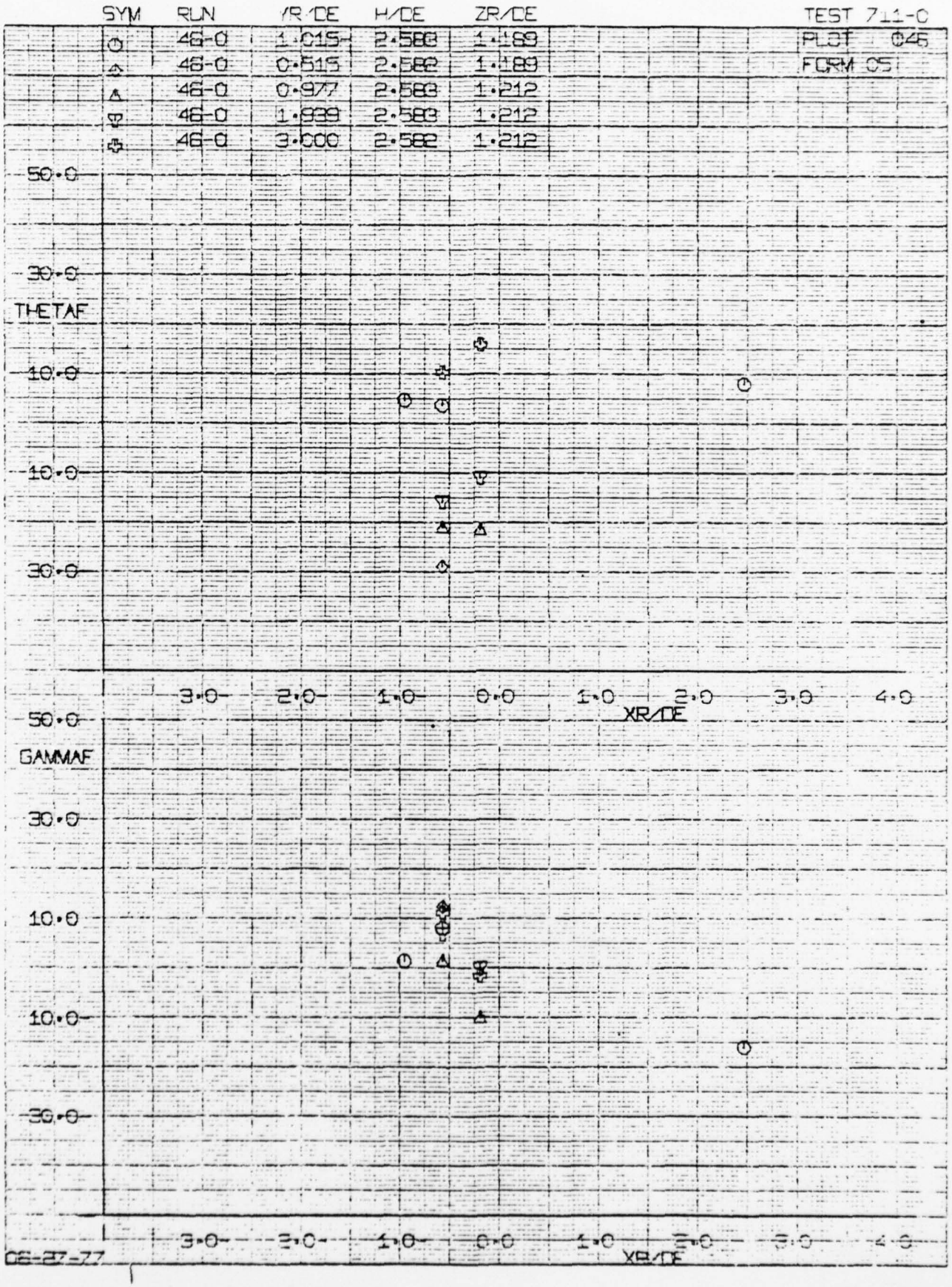

SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-C
PLOT
FORM
44-C
1.152-
2.581
0.552
44-C
0.167-
2.580
0.541
44-C
0.250
2.580
0.533
0.3C
0.2C
0.7C
0.6C
TTR
0.5C
0.4C
0.3C
0.2C
0.1C
3.0C
2.0C
1.0C
0.0C
1.0C
2.0C
3.0C
4.0C
VERT/TR
06-27-71

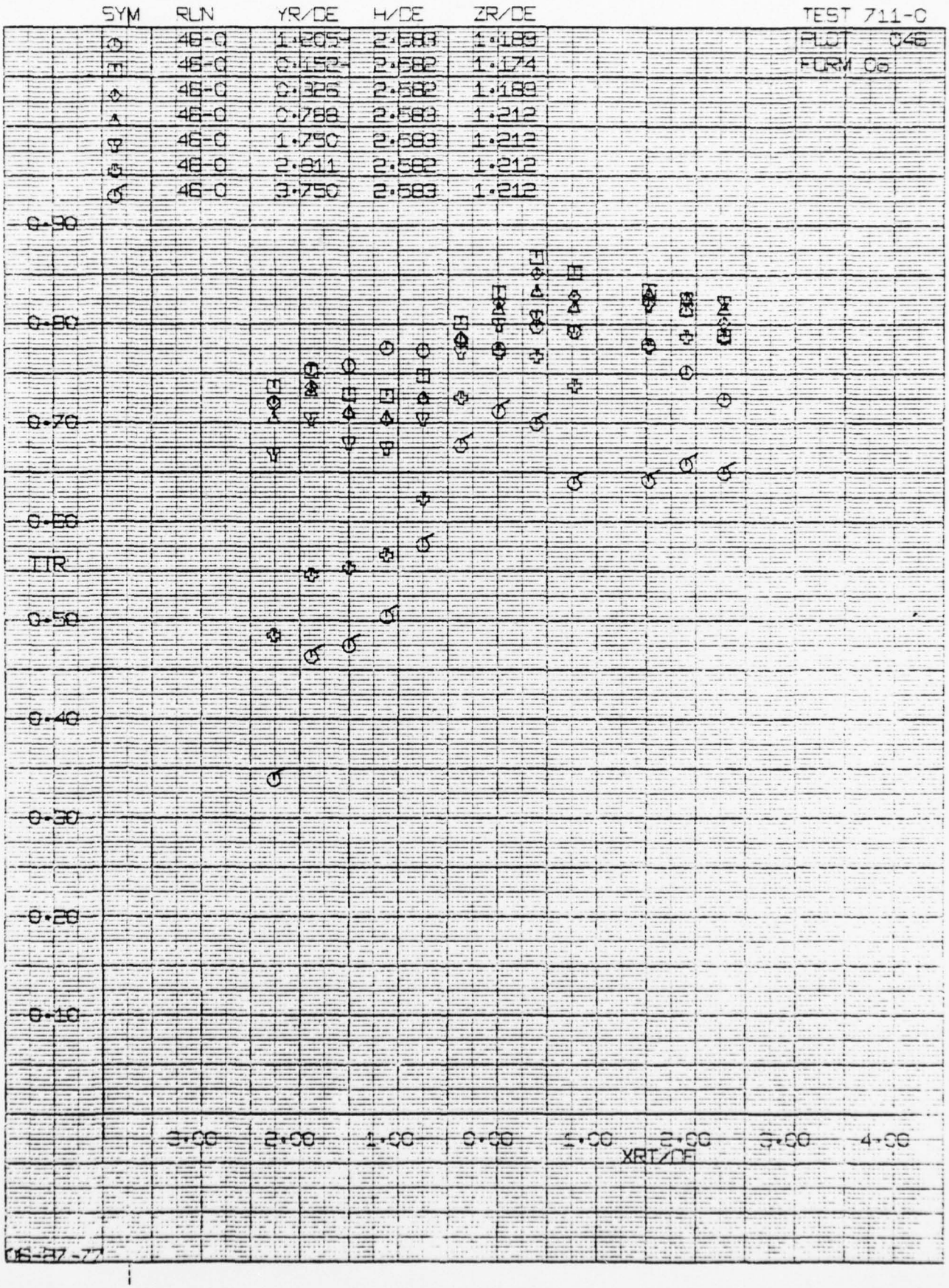

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 045
FORM 04
45-0 1.030 2.581 0.894
45-0 0.000 2.584 0.502
45-0 0.902 2.582 0.502
1.0
MASS
0.8
LB_SEC
FT3
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
1.0
Q
FV
0.8
PSI
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
07-28-77

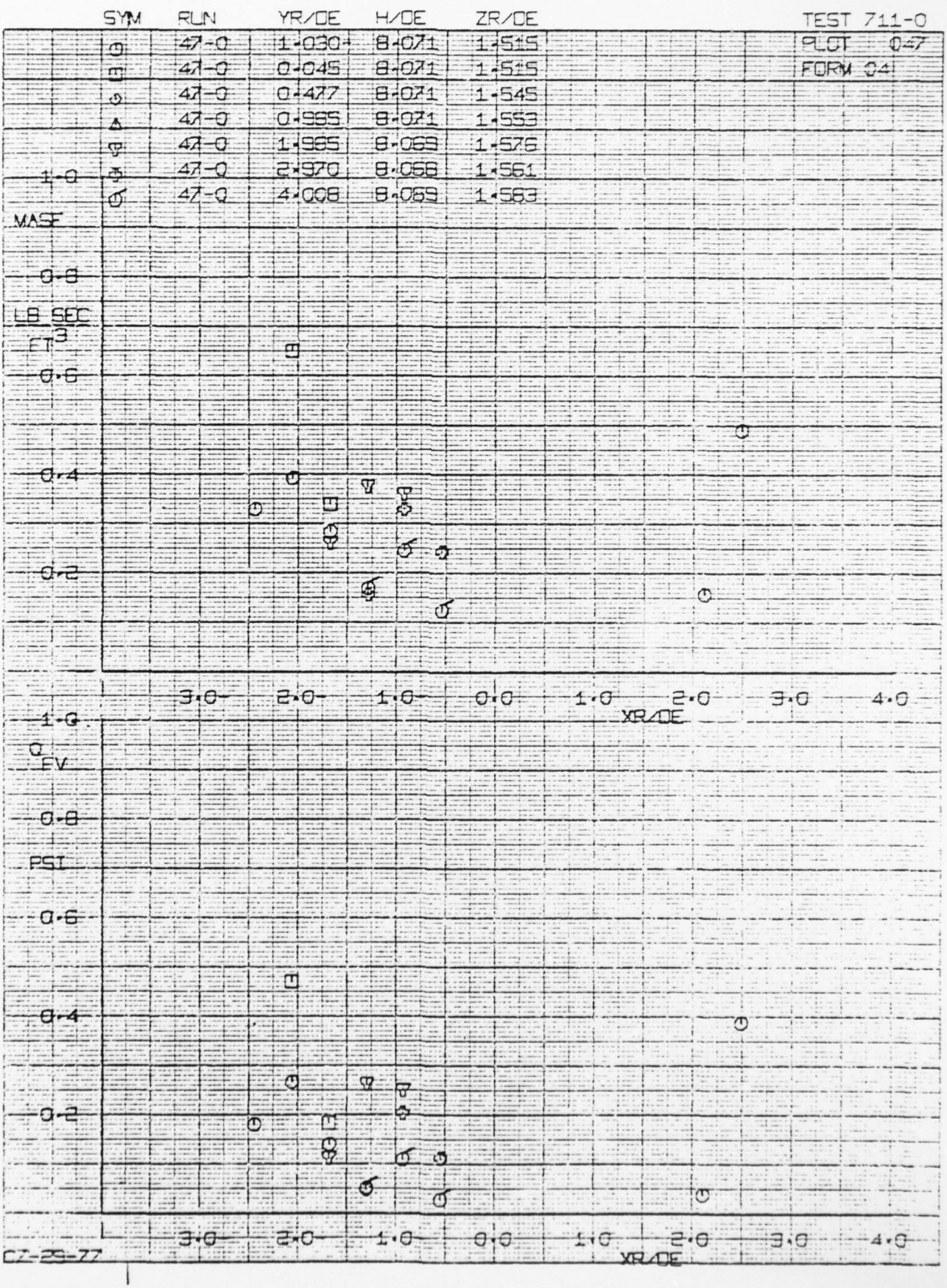

SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-C
45-0
1.030
2.581
0.294
PLOT 045
FCSM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0
2.0
1.0
0.0
1.0
2.0
3.0
4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0
2.0
1.0
0.0
1.0
2.0
3.0
4.0
XR/DE

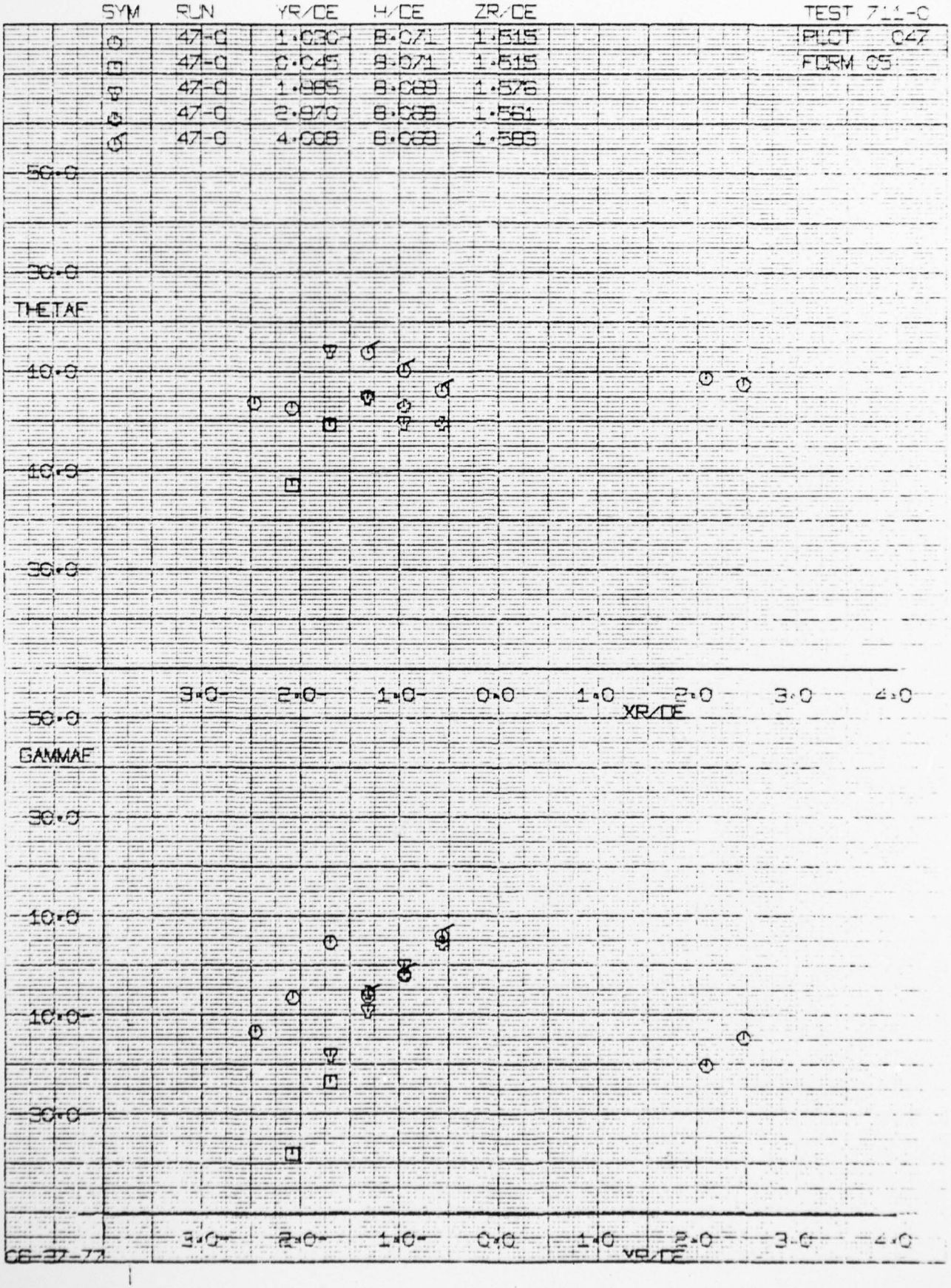

SYM RUN YR/DE H/DE ZR/DE
45-0 1.220 2.581 0.894
45-0 0.189 2.584 0.902
45-0 0.712 2.582 0.902
TEST 711-0
PLOT 045
FORM 05
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
06-27-77

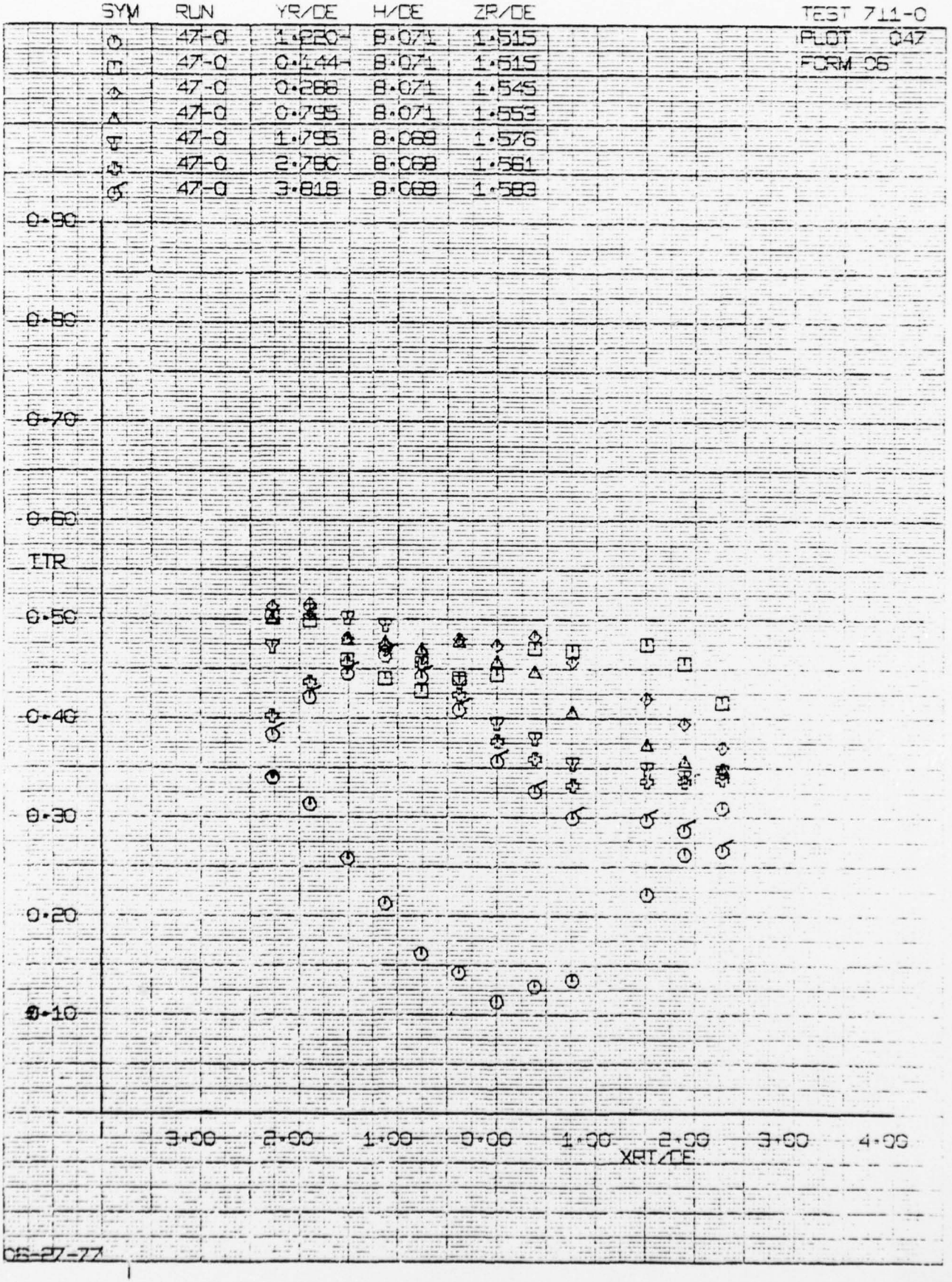

SYM RUN YR/DE H/DE ZR/DE
46-0 1.015 2.583 1.189
46-0 0.038 2.582 1.174
46-0 0.515 2.582 1.189
46-0 0.977 2.583 1.212
46-0 1.939 2.583 1.212
46-0 3.000 2.582 1.212
46-0 3.339 2.583 1.212
TEST 711-0
PLOT C46
FORM 04
MASF
LB SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
Q
FV
PSI
07-29-77

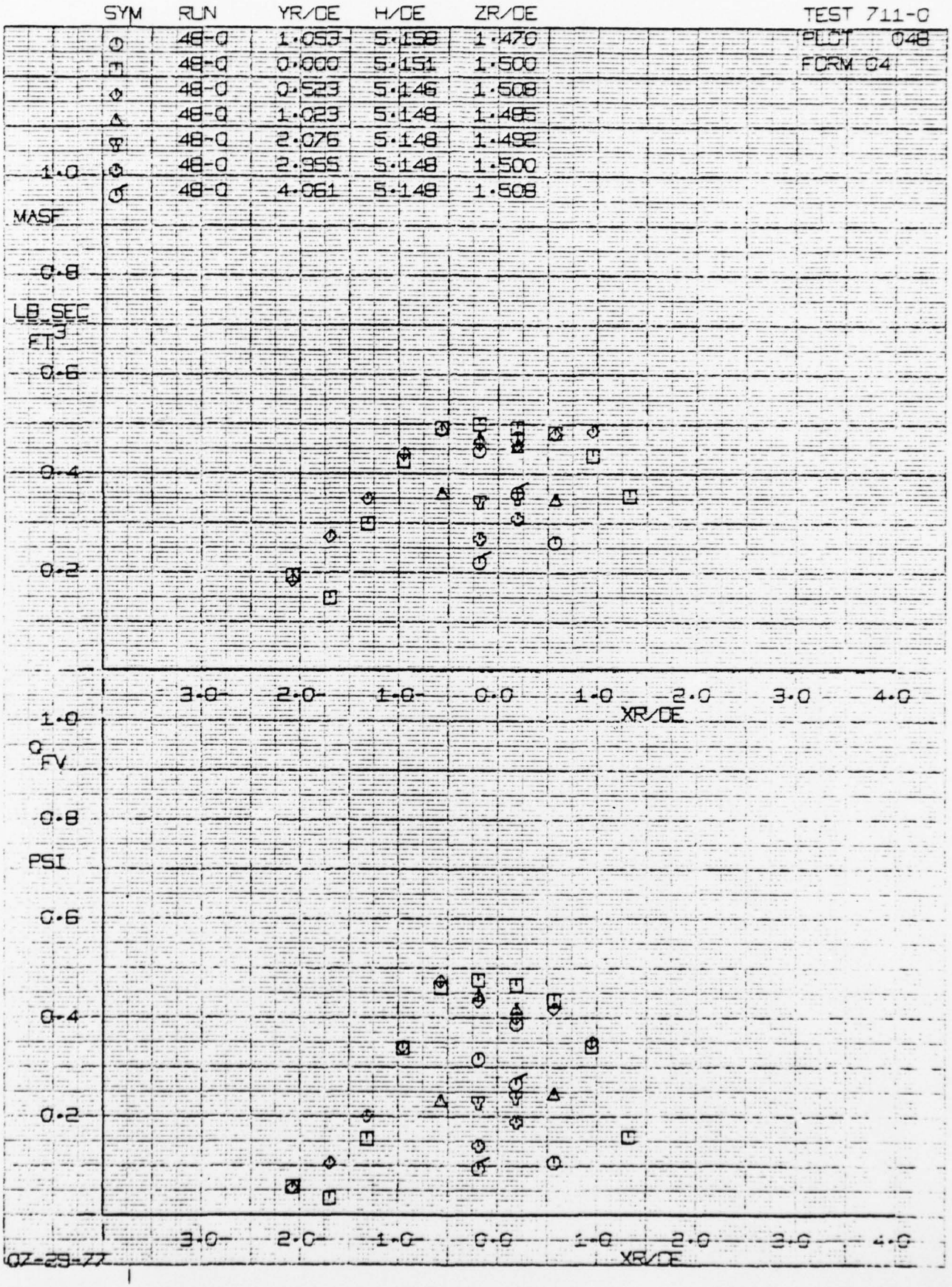

SYM RUN /R/DE H/DE ZR/DE
46-0 1.015 2.588 1.189
46-0 0.515 2.582 1.189
46-0 0.977 2.583 1.212
46-0 1.939 2.583 1.212
46-0 3.000 2.582 1.212
TEST 711-0
PLOT 046
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77

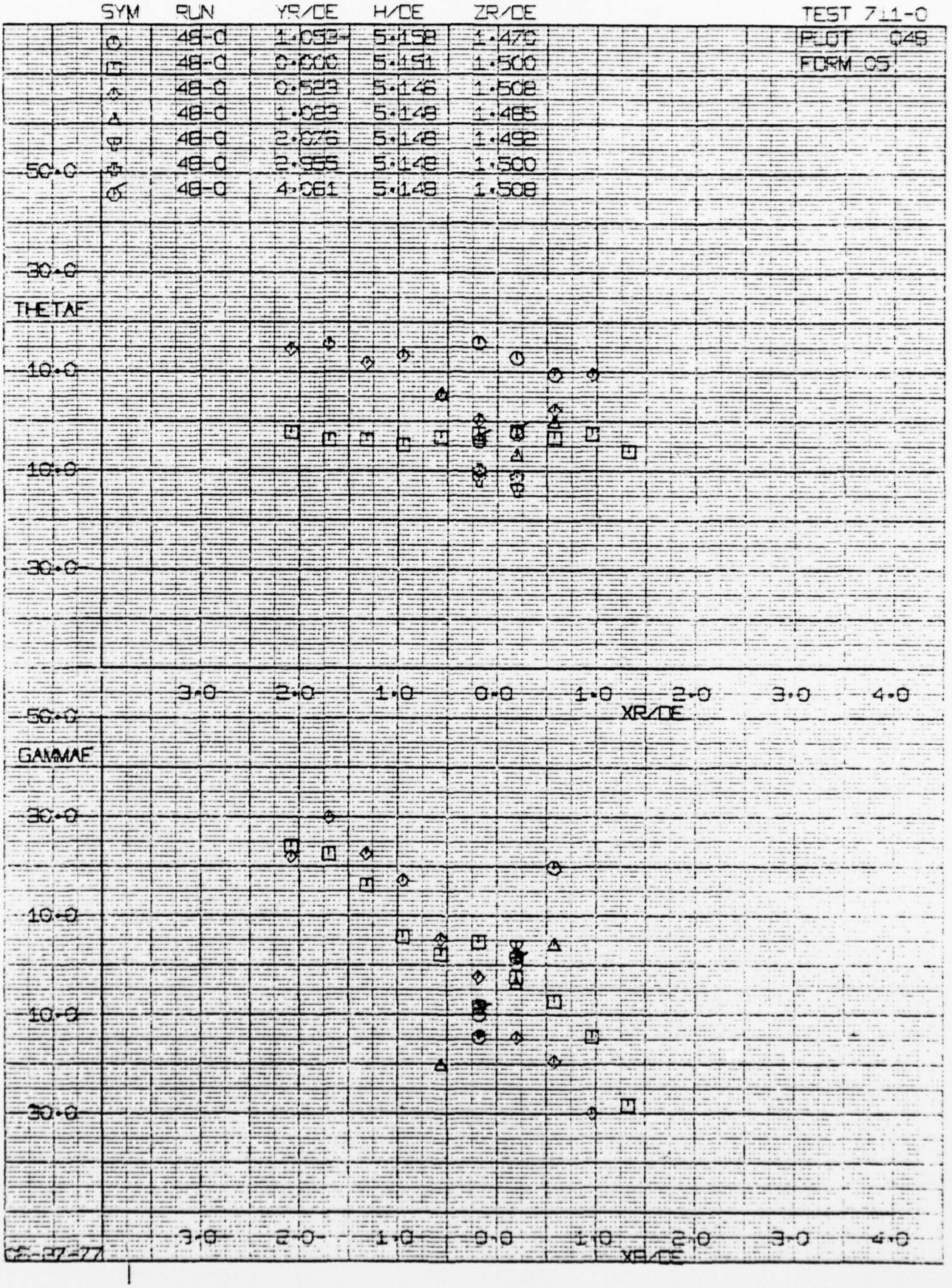

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 046
FORM 06
46-0 1.205 2.583 1.188
46-0 0.152 2.582 1.174
46-0 0.326 2.582 1.188
46-0 0.788 2.583 1.212
46-0 1.750 2.583 1.212
46-0 2.811 2.582 1.212
46-0 3.750 2.583 1.212
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-27-77

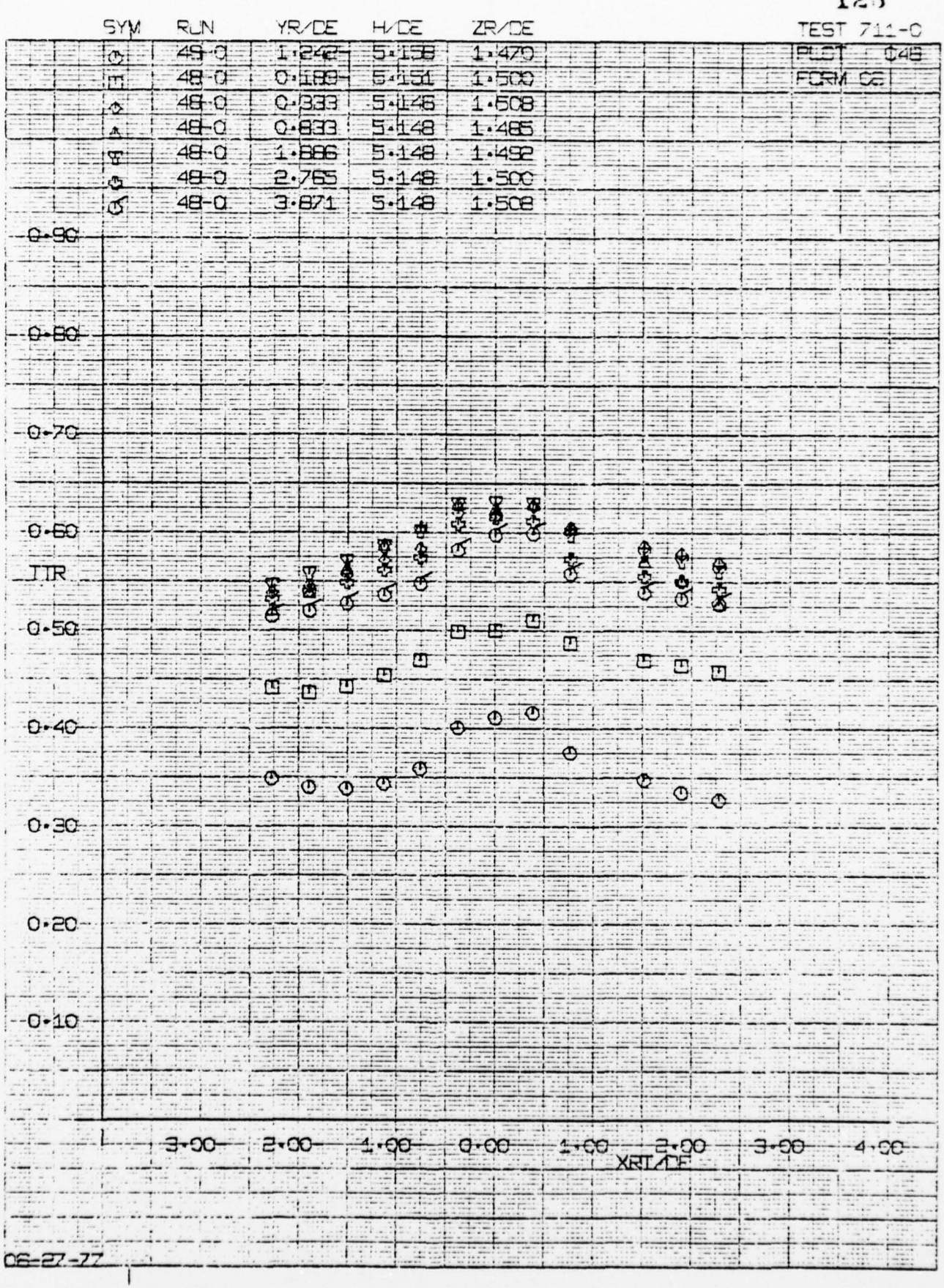

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 047
FORM 04
47-0 1.030 8.071 1.515
47-0 0.045 8.071 1.515
47-0 0.477 8.071 1.545
47-0 0.955 8.071 1.553
47-0 1.965 8.069 1.576
47-0 2.970 8.068 1.561
47-0 4.008 8.069 1.563
MASS
LB SEC
FT3
XR/DE
Q
FV
PSI
CZ-25-77

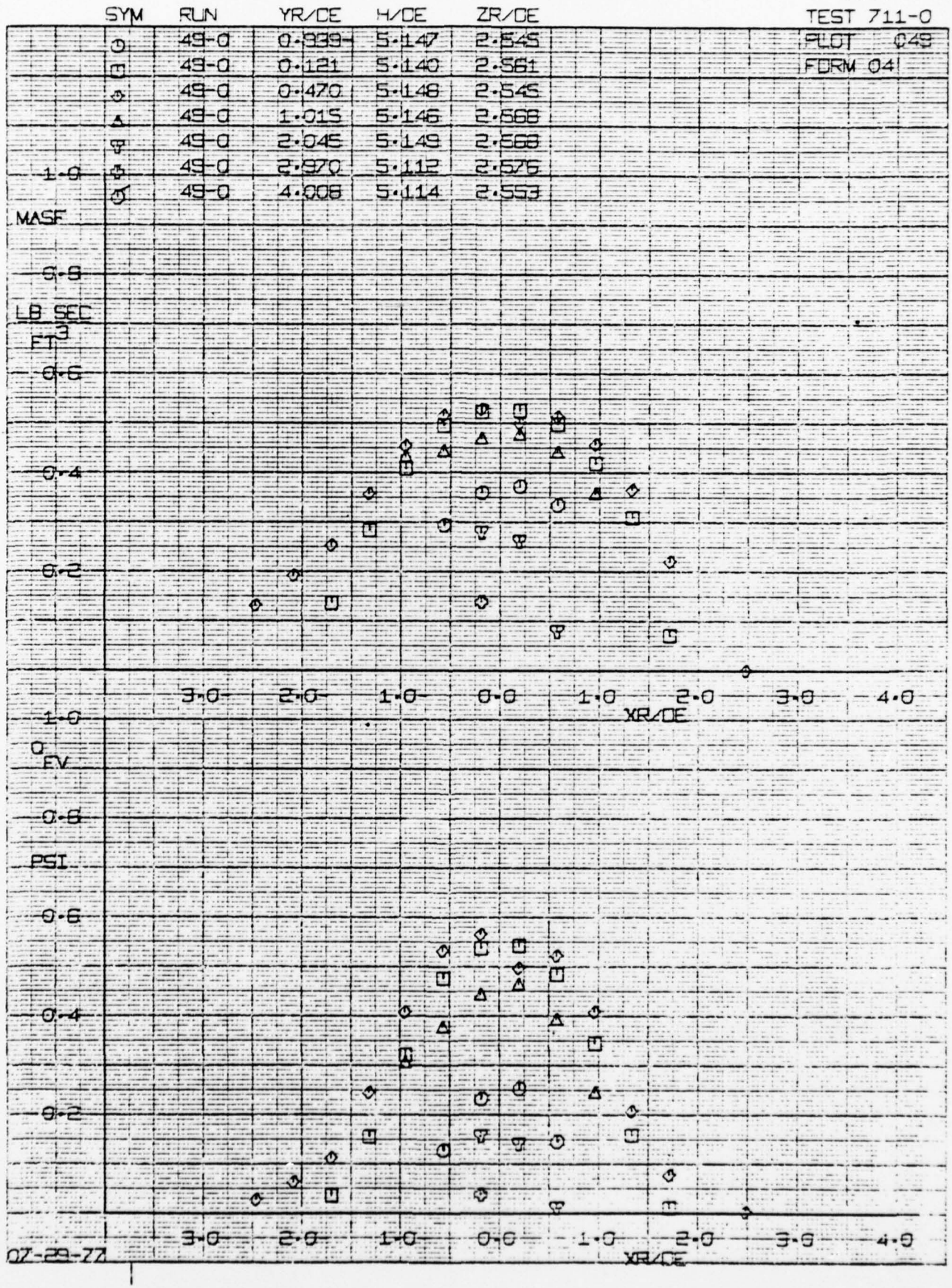

SYM RUN YR/CE H/CE ZR/CE
47-0 1.030 8.071 1.515
47-0 0.045 8.071 1.515
47-0 1.885 8.089 1.575
47-0 2.870 8.085 1.561
47-0 4.008 8.083 1.583
TEST 711-0
PLOT 047
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
YR/DE
06-27-77

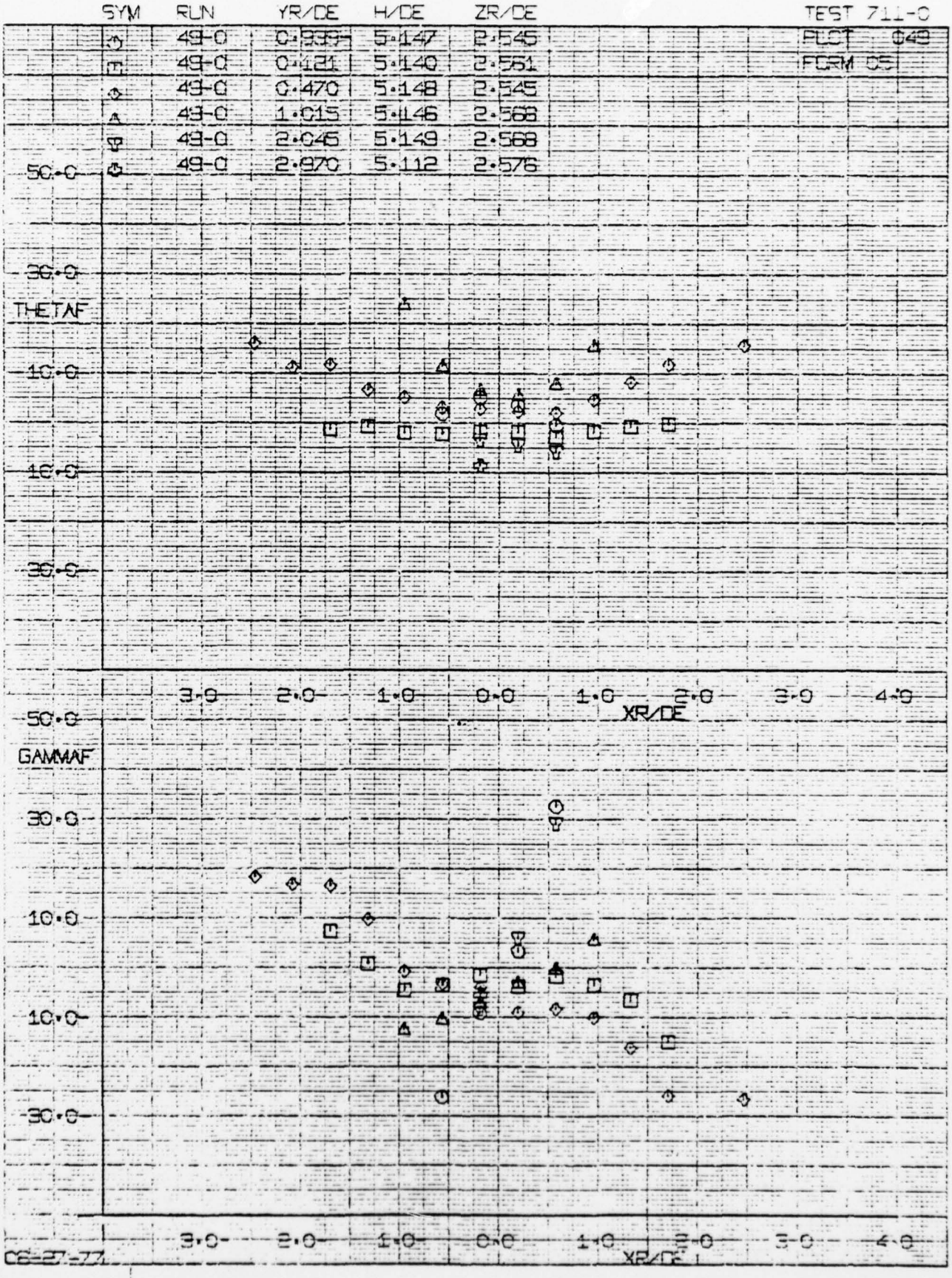

SYM RUN YR/DE H/DE ZR/DE
47-0 1.220 8.071 1.515
47-0 0.744 8.071 1.515
47-0 0.288 8.071 1.545
47-0 0.795 8.071 1.553
47-0 1.795 8.088 1.576
47-0 2.780 8.068 1.561
47-0 3.818 8.088 1.583
TEST 711-0
PLOT 047
FORM 05
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
05-27-77

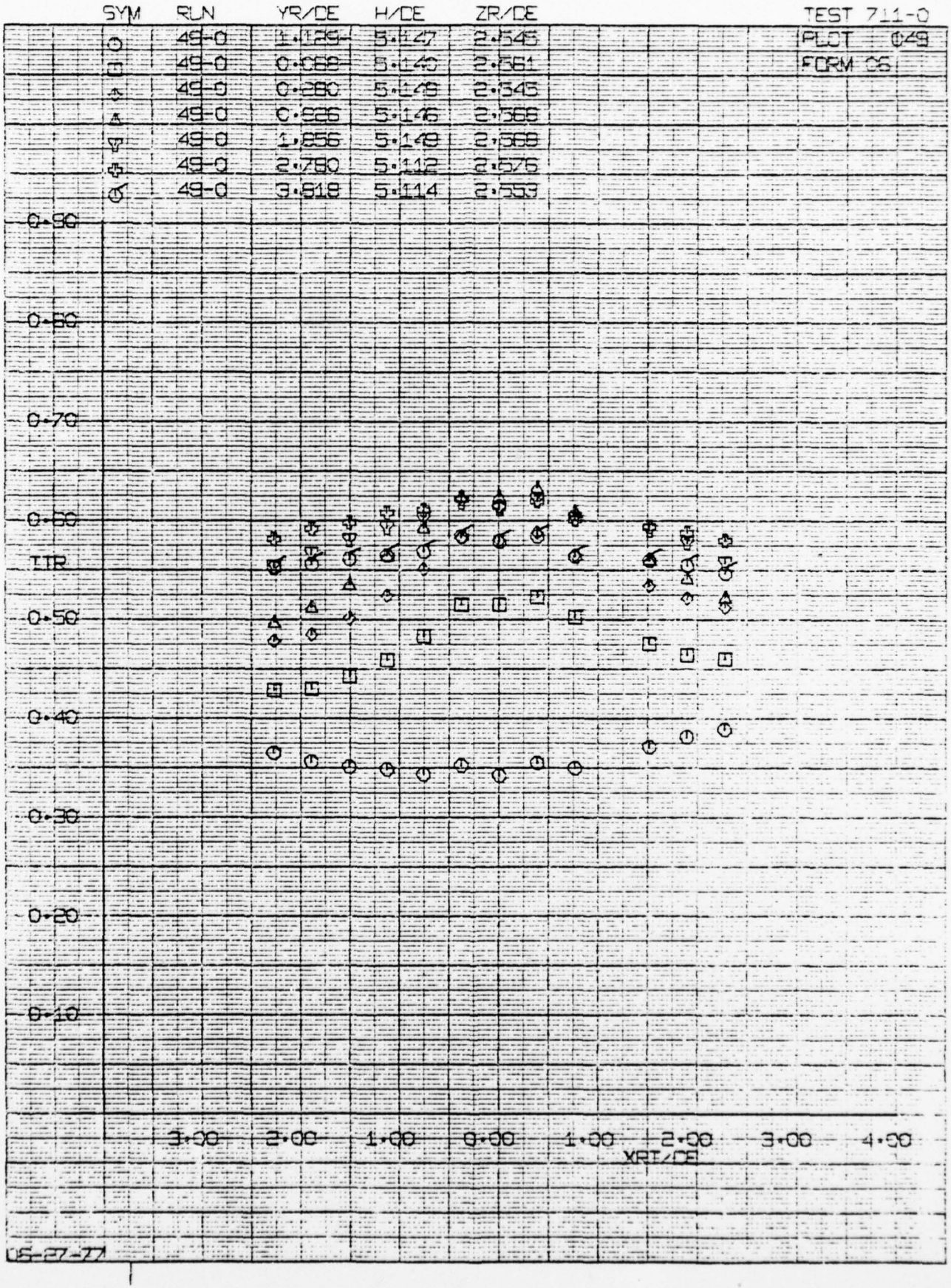

SYM RUN YR/DE H/DE ZR/DE
48-0 1.053 5.158 1.476
48-0 0.000 5.151 1.500
48-0 0.523 5.146 1.508
48-0 1.023 5.148 1.485
48-0 2.076 5.148 1.492
48-0 2.955 5.148 1.500
48-0 4.061 5.148 1.508
TEST 711-0
PLOT 048
FORM 04
MASF
LB_SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
QFV
PSI
XS/DE
OZ-29-77

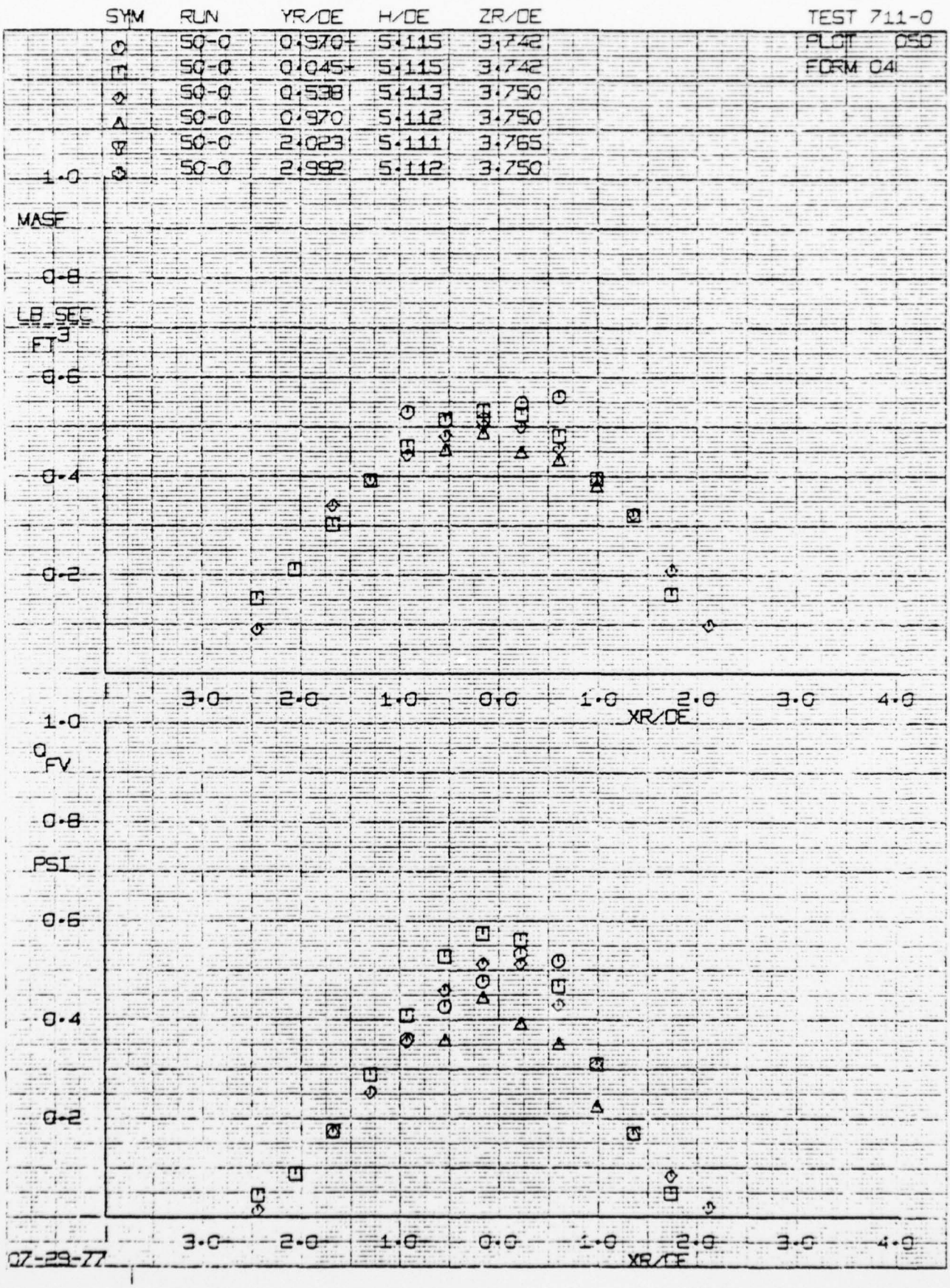

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 049
FORM 05
48-0 1.053 5.158 1.470
48-0 0.000 5.151 1.500
48-0 0.523 5.146 1.502
48-0 1.023 5.148 1.485
48-0 2.076 5.148 1.492
48-0 2.955 5.148 1.500
48-0 4.061 5.148 1.508
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
C2-27-77

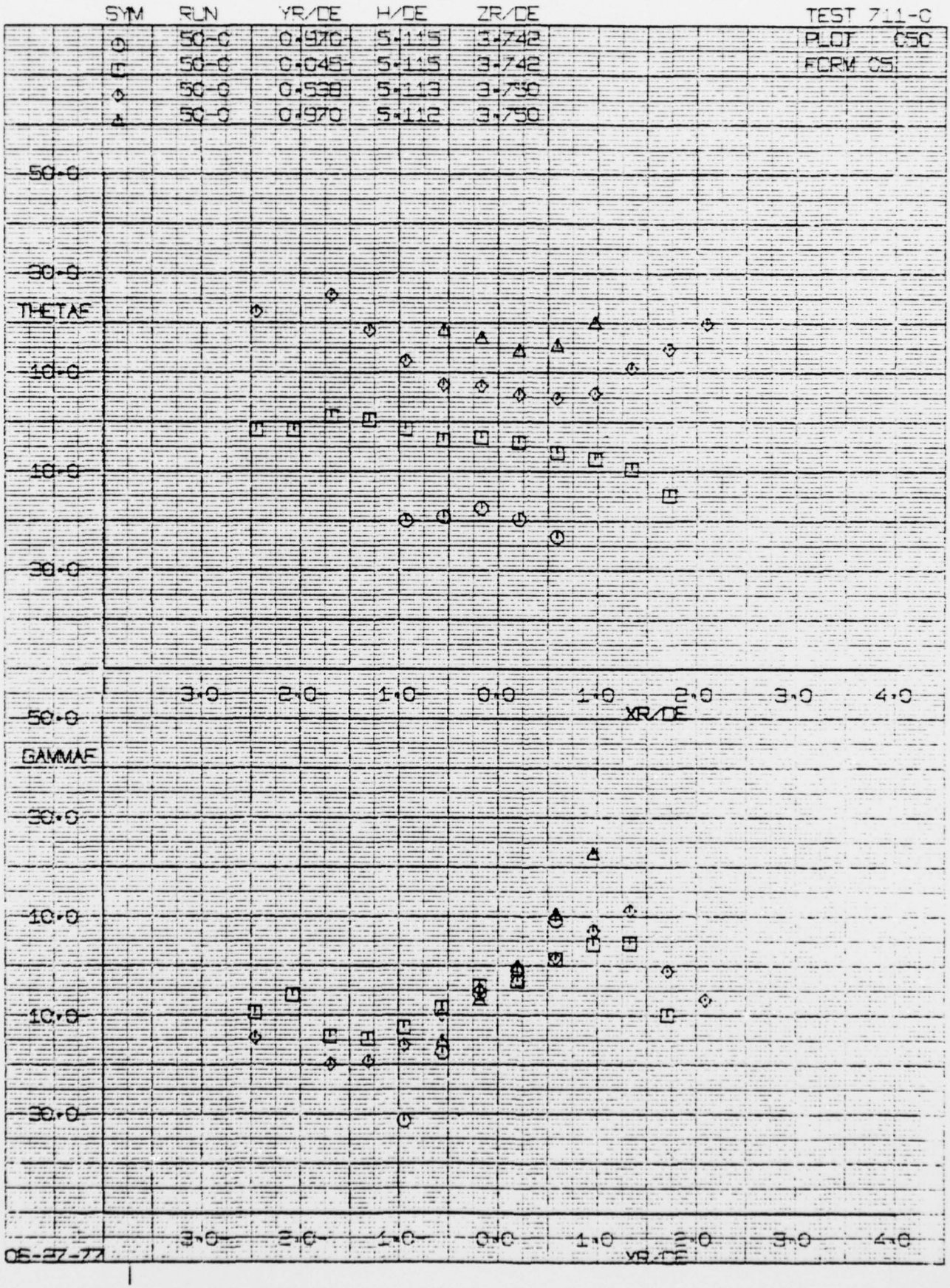

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT Φ48
FORM 02
49-0 1.242 5.158 1.470
48-0 0.189 5.151 1.500
48-0 0.333 5.146 1.508
48-0 0.833 5.148 1.485
48-0 1.886 5.148 1.492
48-0 2.765 5.148 1.500
48-0 3.871 5.148 1.508
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-27-77

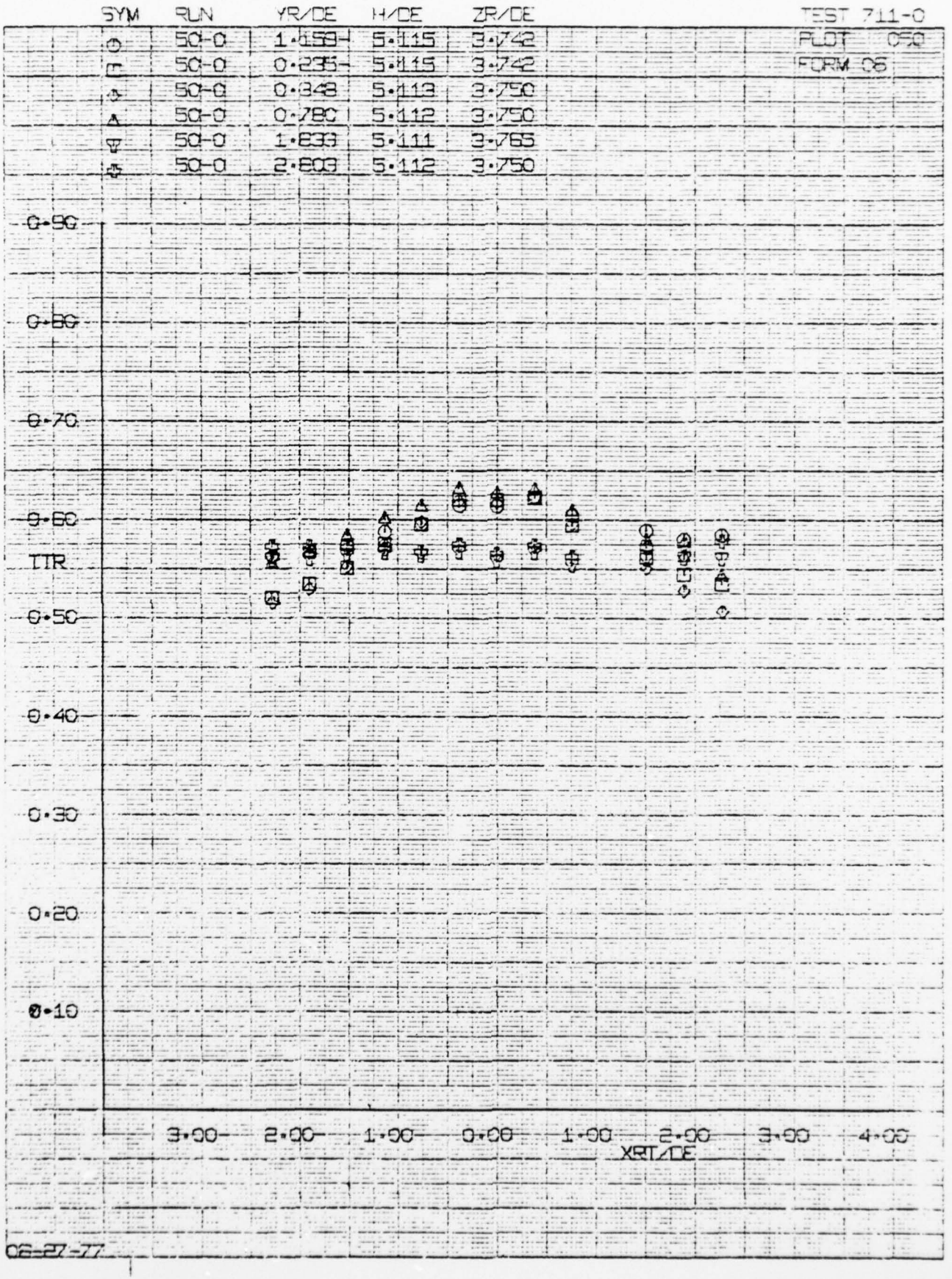

SYM RUN YR/DE H/DE ZR/DE
49-0 0.939 5.147 2.545
49-0 0.121 5.140 2.561
49-0 0.470 5.148 2.545
49-0 1.015 5.146 2.568
49-0 2.045 5.149 2.568
49-0 2.970 5.112 2.575
49-0 4.008 5.114 2.553
TEST 711-0
PLOT 049
FORM 04
MASF
LB SEC
FT3
XR/DE
PSI
07-29-77

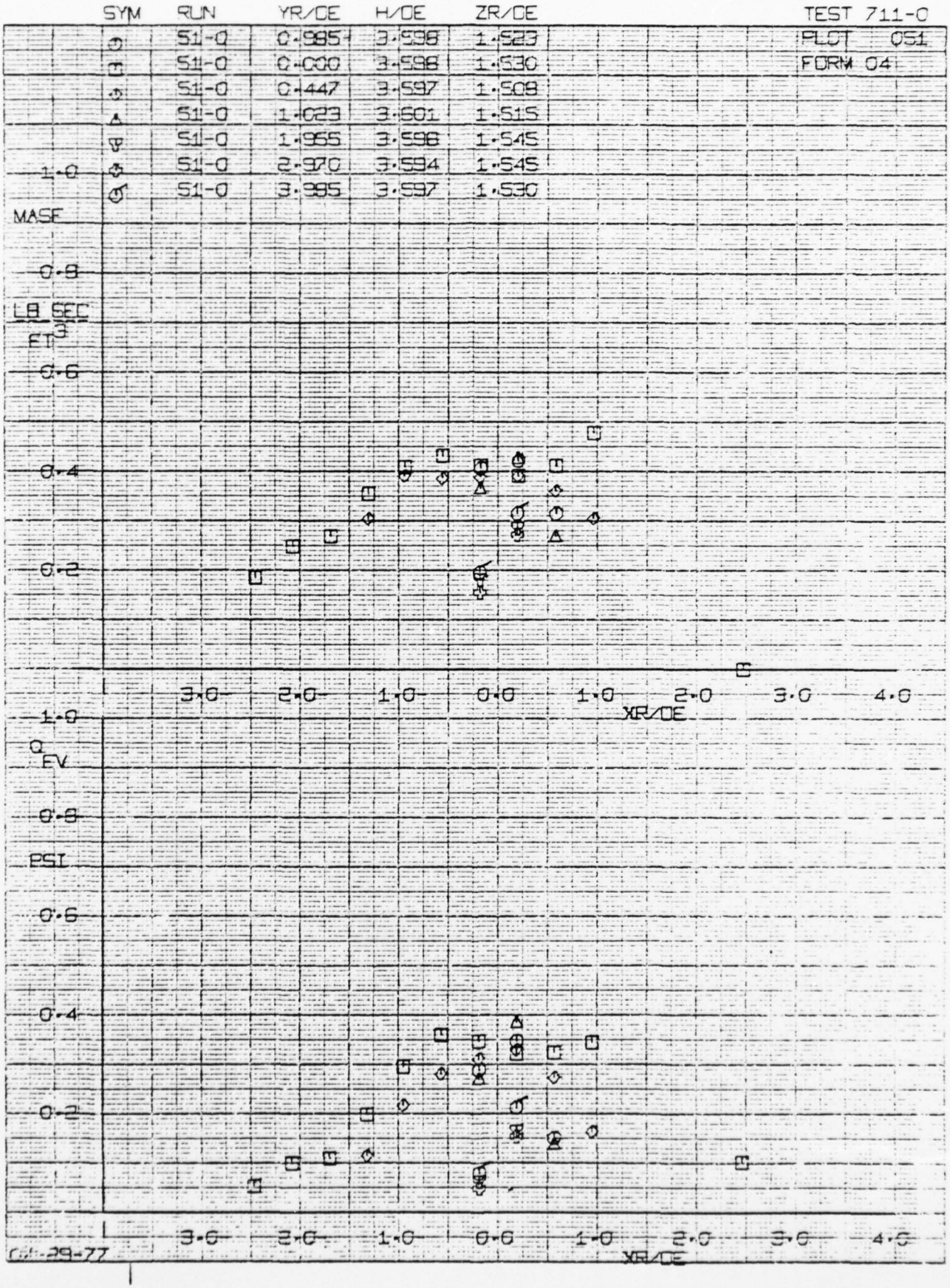

SYM RUN YR/DE H/DE ZR/DE
49-0 0.337 5.147 2.545
49-0 0.421 5.140 2.561
43-0 0.470 5.148 2.545
43-0 1.015 5.146 2.568
43-0 2.046 5.149 2.568
49-0 2.970 5.112 2.576
TEST 711-0
PLOT #49
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
CE-27-77

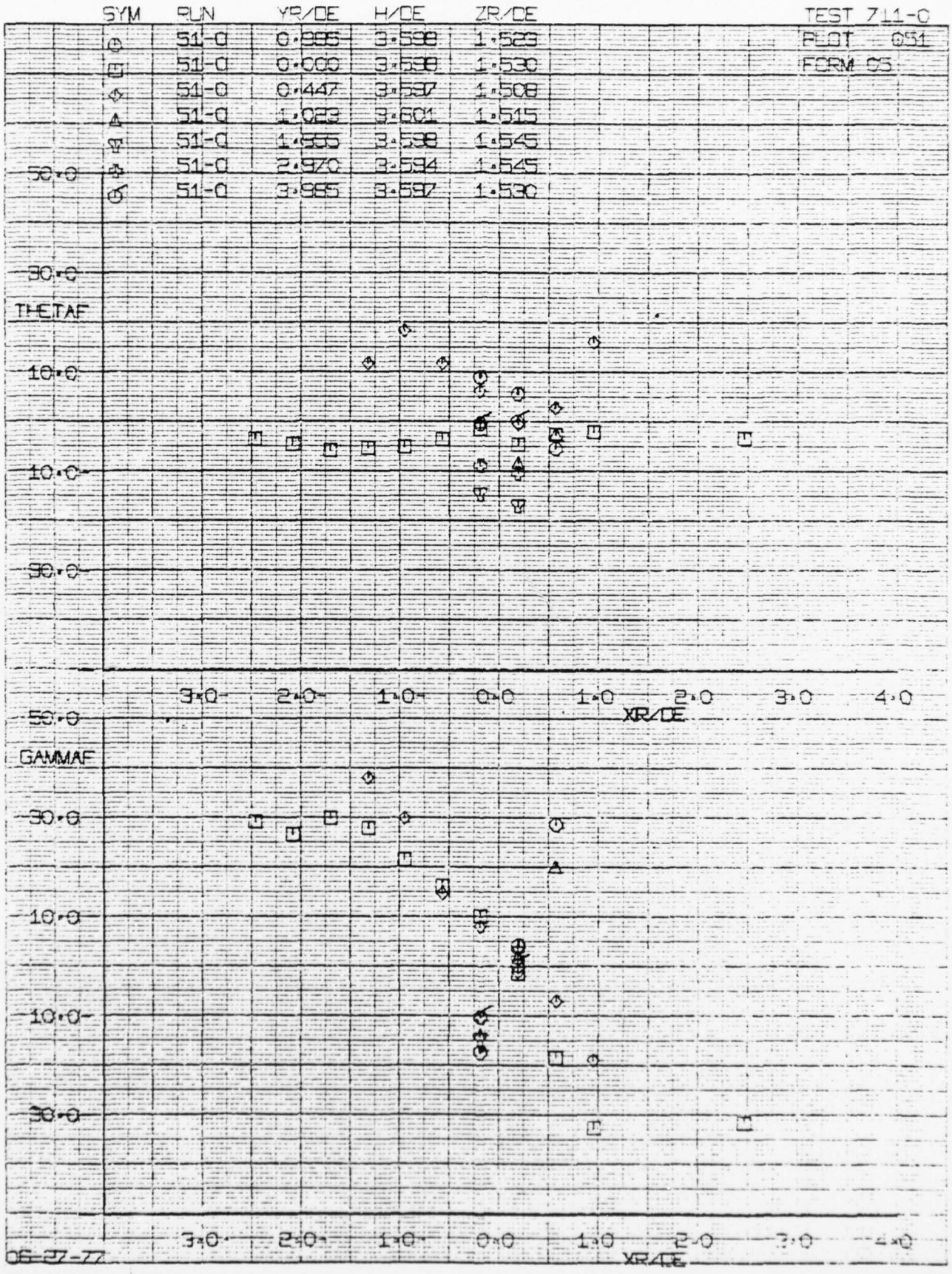

SYM RUN YR/DE H/DE ZR/DE
49-0 1.129 5.147 2.545
49-0 0.068 5.140 2.561
49-0 0.280 5.148 2.545
49-0 0.926 5.146 2.566
49-0 1.856 5.148 2.568
49-0 2.780 5.112 2.576
49-0 3.618 5.114 2.553
TEST 711-0
PLOT 049
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
05-27-77

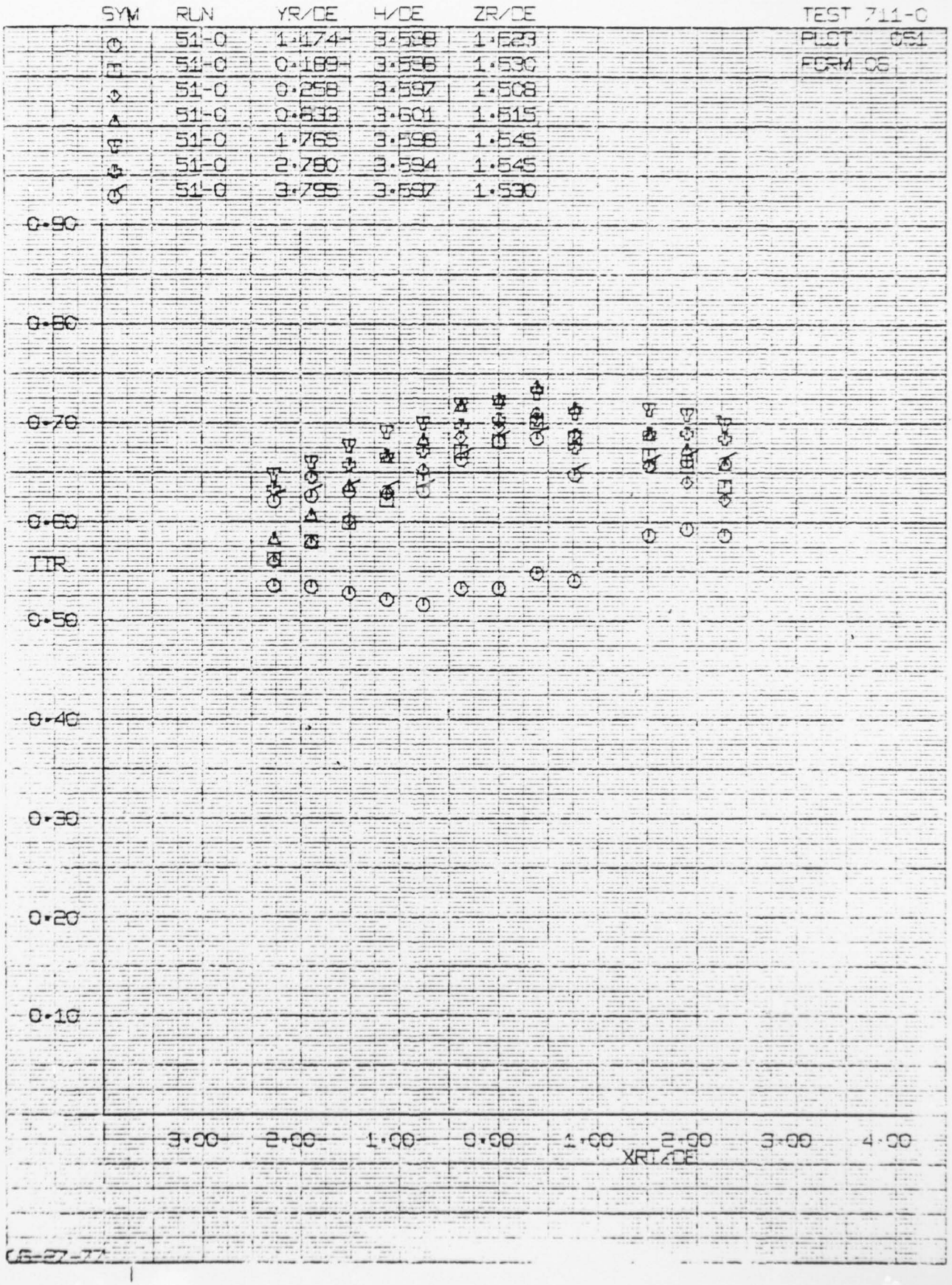

SYM RUN YR/DE H/DE ZR/DE
50-0 0.970+ 5.115 3.742
50-0 0.045+ 5.115 3.742
50-0 0.538 5.113 3.750
50-0 0.970 5.112 3.750
50-0 2.023 5.111 3.765
50-0 2.992 5.112 3.750
TEST 711-0
PLOT 050
FORM 04
MASF
LB_SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
QFV
PSI
07-29-77

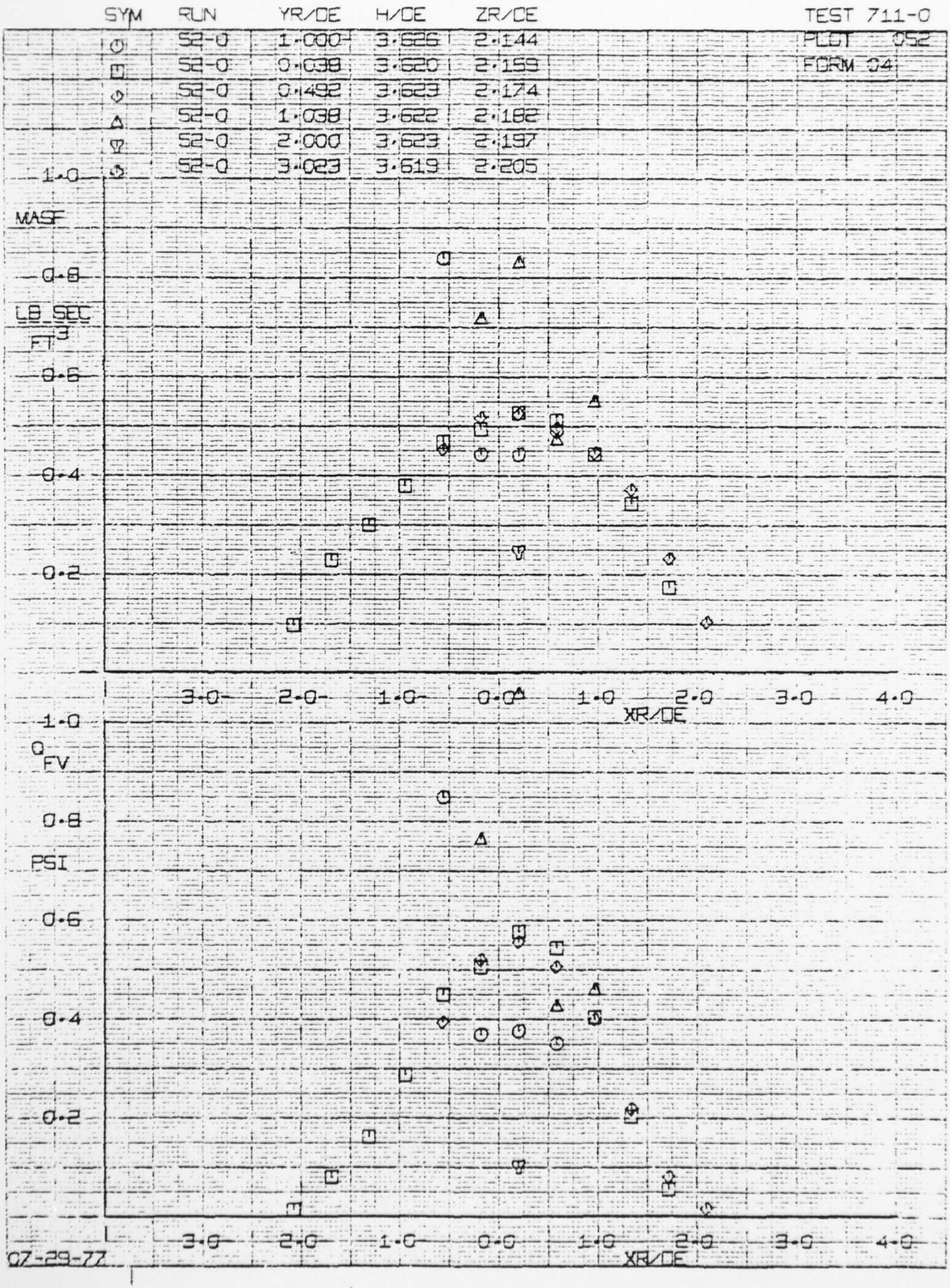

SYM RUN YR/DE H/DE ZR/DE
50-0 0.970 5.115 3.742
50-0 0.045 5.115 3.742
50-0 0.538 5.113 3.750
50-0 0.970 5.112 3.750
TEST 711-0
PLOT C5C
FORM C5
THETAF
50.0
30.0
10.0
-10.0
-30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
GAMMAF
50.0
30.0
10.0
-10.0
-30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
YR/DE
05-27-77

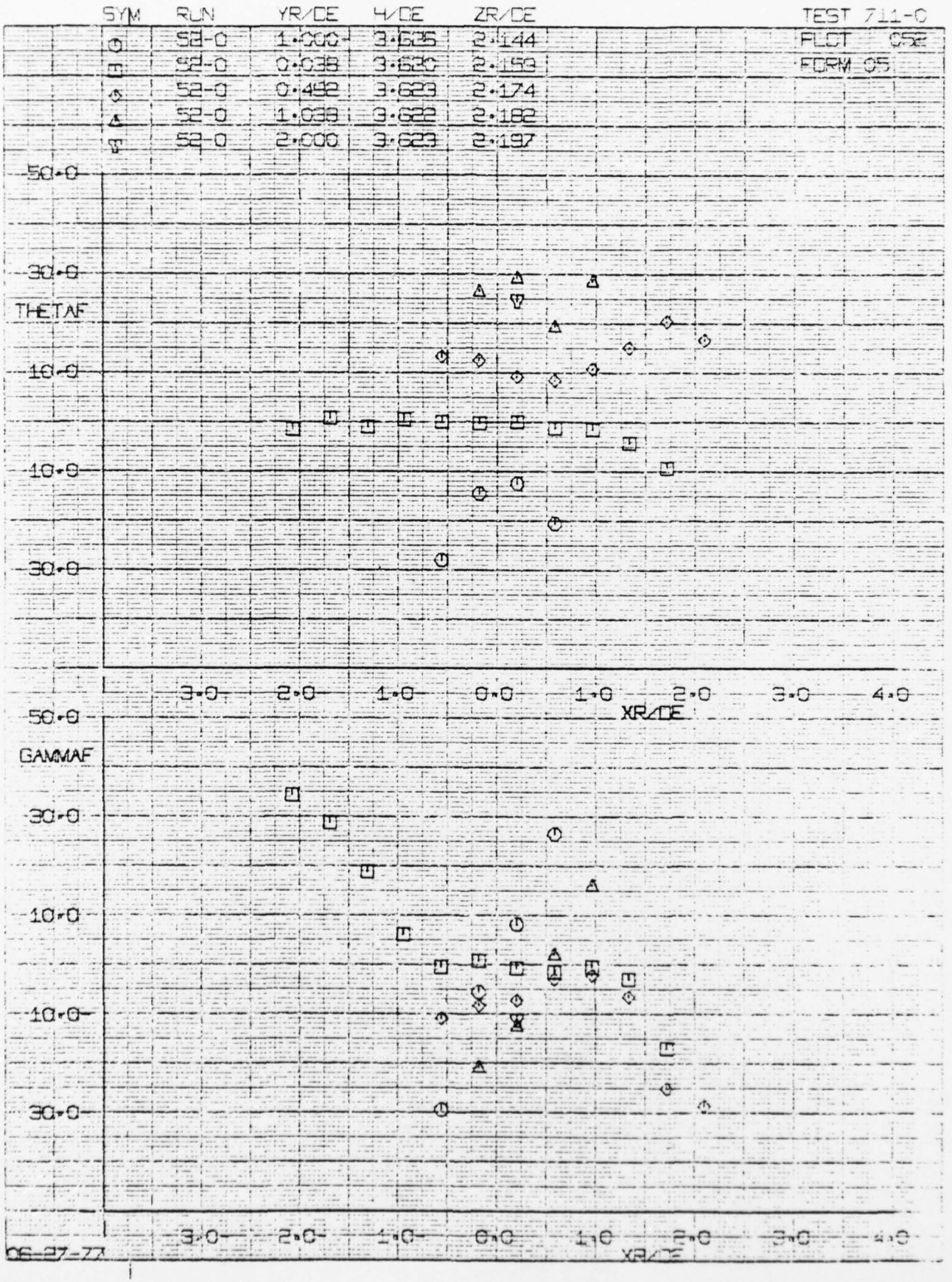

SYM RUN YR/DE H/DE ZR/DE
50-0 1.158 5.115 3.742
50-0 0.235 5.115 3.742
50-0 0.348 5.113 3.750
50-0 0.780 5.112 3.750
50-0 1.833 5.111 3.765
50-0 2.803 5.112 3.750
TEST 711-0
PLOT 050
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
06-27-77

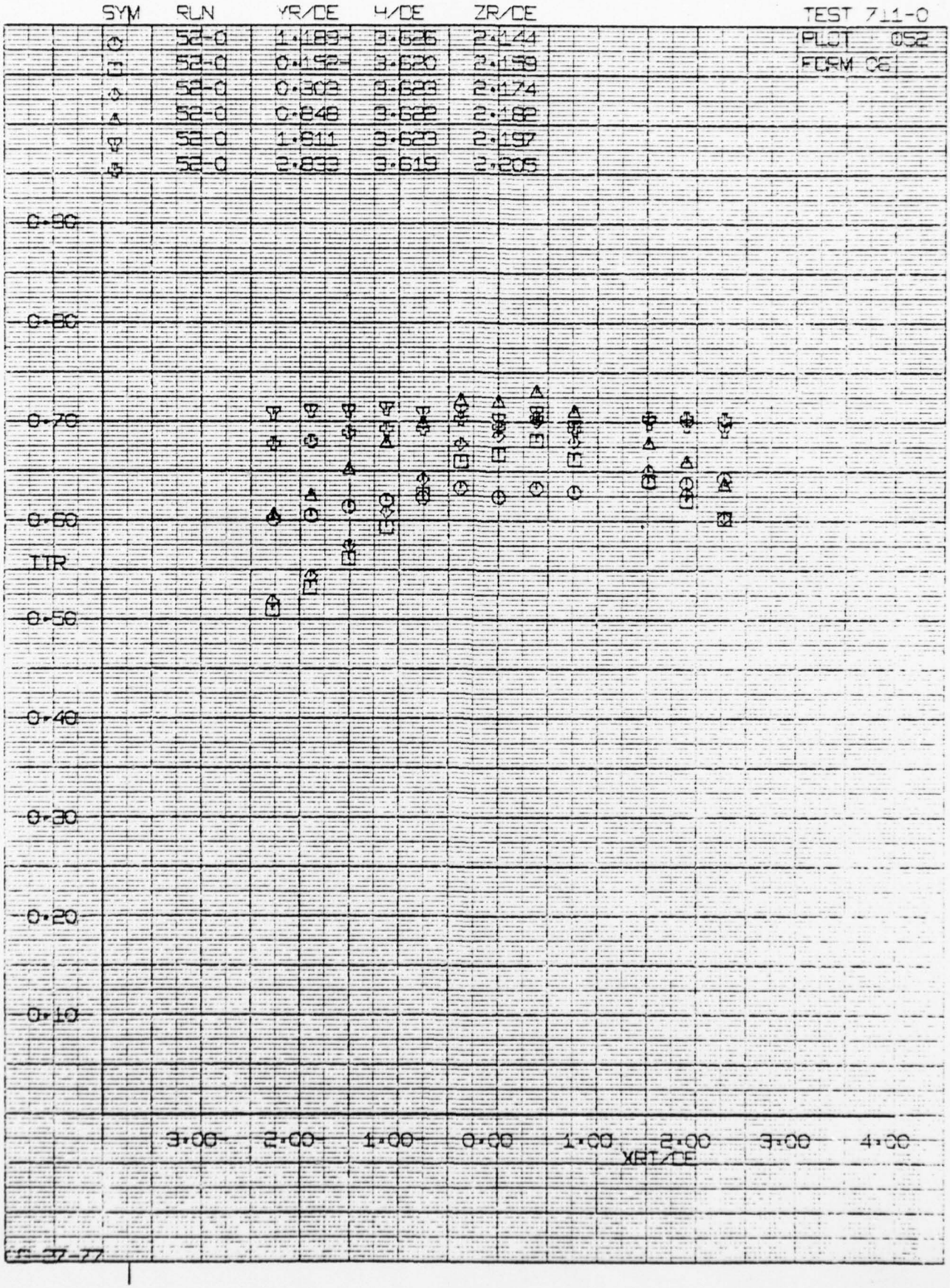

SYM RUN YR/DE H/DE ZR/DE
S1-0 0.985 3.598 1.523
S1-0 0.000 3.598 1.530
S1-0 0.447 3.597 1.508
S1-0 1.023 3.601 1.515
S1-0 1.965 3.596 1.545
S1-0 2.970 3.594 1.545
S1-0 3.995 3.597 1.530
TEST 711-0
PLOT 051
FORM 04
MASS
LB SEC
FT3
XR/DE
Q
EV
PSI
XR/DE
1-29-77

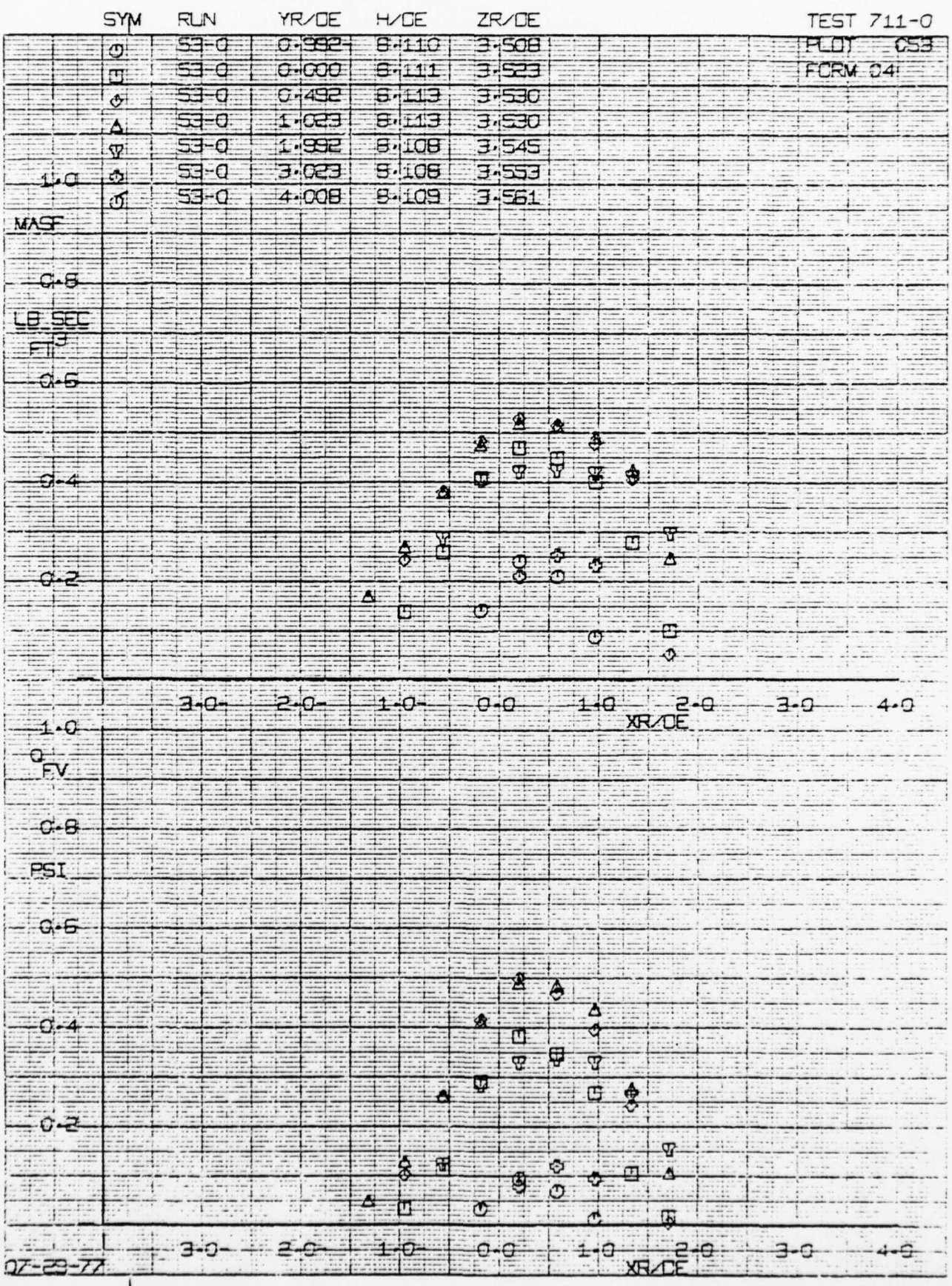

SYM RUN YR/DE H/DE ZR/DE
51-0 0.995 3.538 1.523
51-0 0.000 3.538 1.530
51-0 0.447 3.537 1.508
51-0 1.023 3.601 1.515
51-0 1.555 3.538 1.545
51-0 2.970 3.594 1.545
51-0 3.965 3.597 1.530
TEST 711-0
PLOT 051
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-27-77

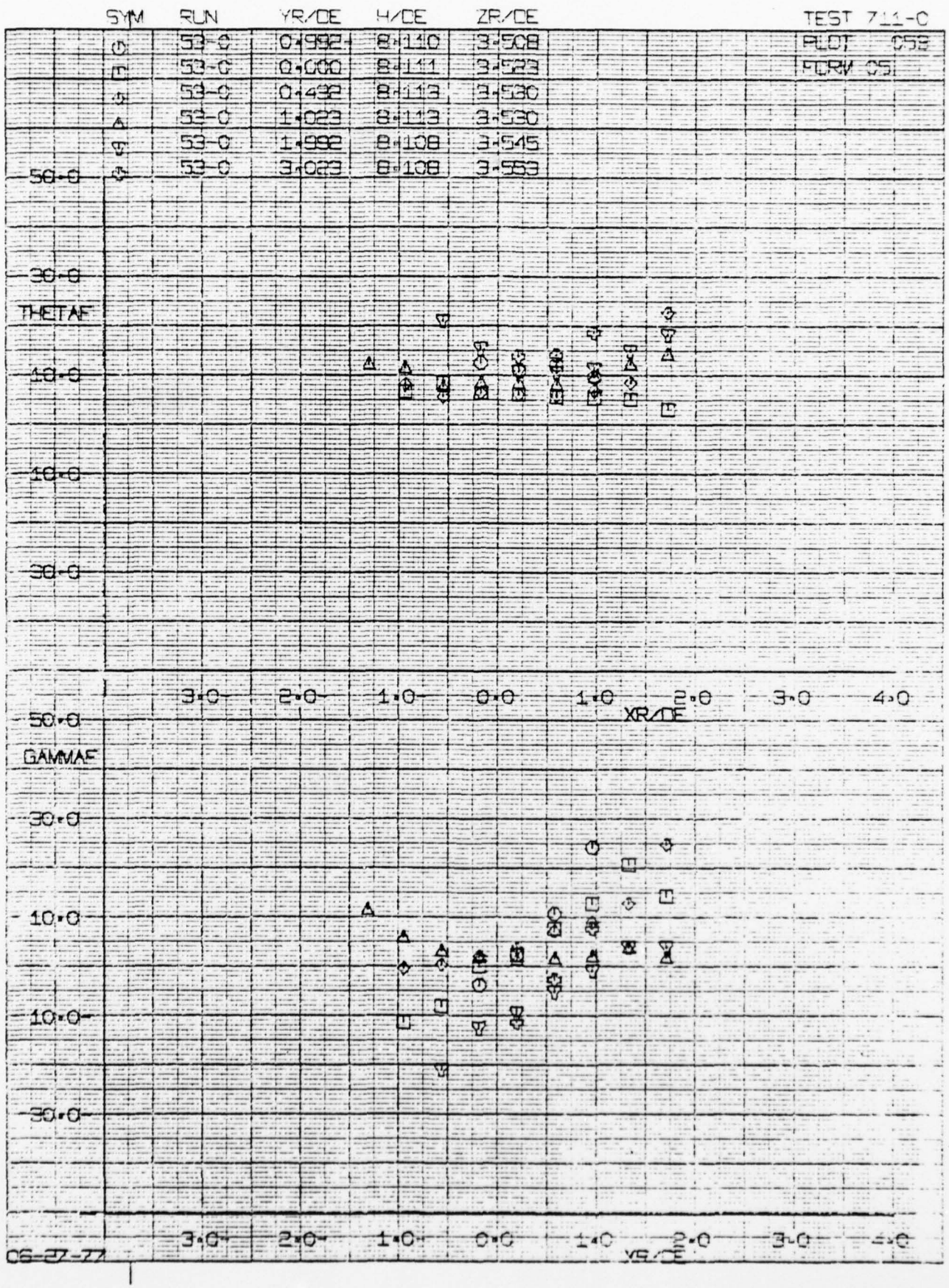

SYM RUN YR/DE H/DE ZR/DE
51-0 1.174- 3.538 1.523
51-0 0.189- 3.536 1.530
51-0 0.258 3.597 1.508
51-0 0.633 3.601 1.515
51-0 1.765 3.598 1.545
51-0 2.780 3.594 1.545
51-0 3.795 3.597 1.530
TEST 711-0
PLOT 051
FORM 06
0.90
0.80
0.70
0.60
IIR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
06-27-77

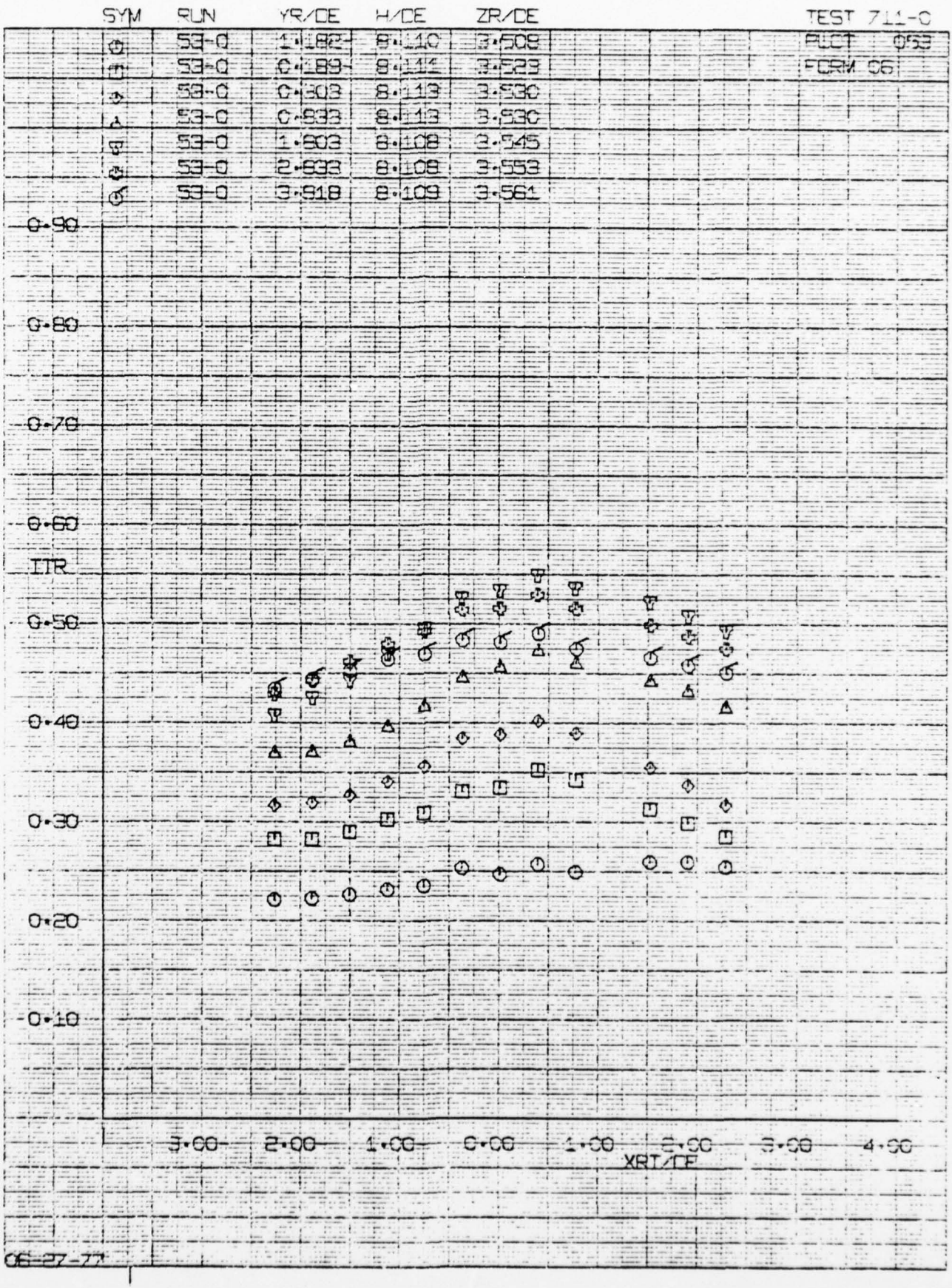

SYM RUN YR/DE H/DE ZR/DE
S2-0 1.000 3.626 2.144
S2-0 0.038 3.620 2.159
S2-0 0.492 3.623 2.174
S2-0 1.038 3.622 2.182
S2-0 2.000 3.623 2.197
S2-0 3.023 3.619 2.205
TEST 711-0
PLOT 052
FORM 04
MASF
LB SEC
FT3
XR/DE
FV
PSI
07-29-77

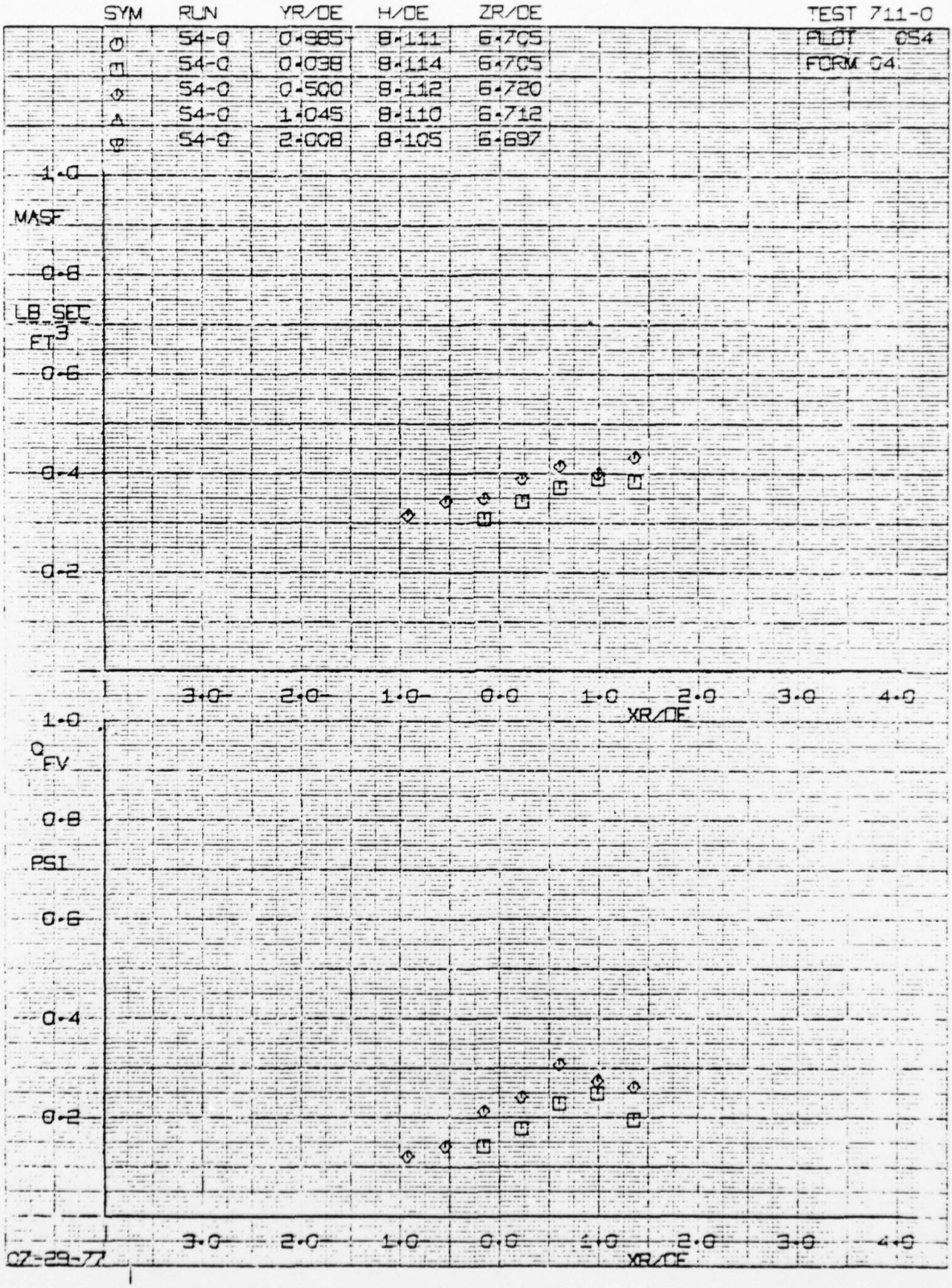

SYM RUN YR/DE M/DE ZR/DE
52-0 1.000 3.625 2.144
52-0 0.038 3.620 2.153
52-0 0.482 3.623 2.174
52-0 1.038 3.622 2.182
52-0 2.000 3.623 2.197
TEST 711-0
PLOT 05
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77

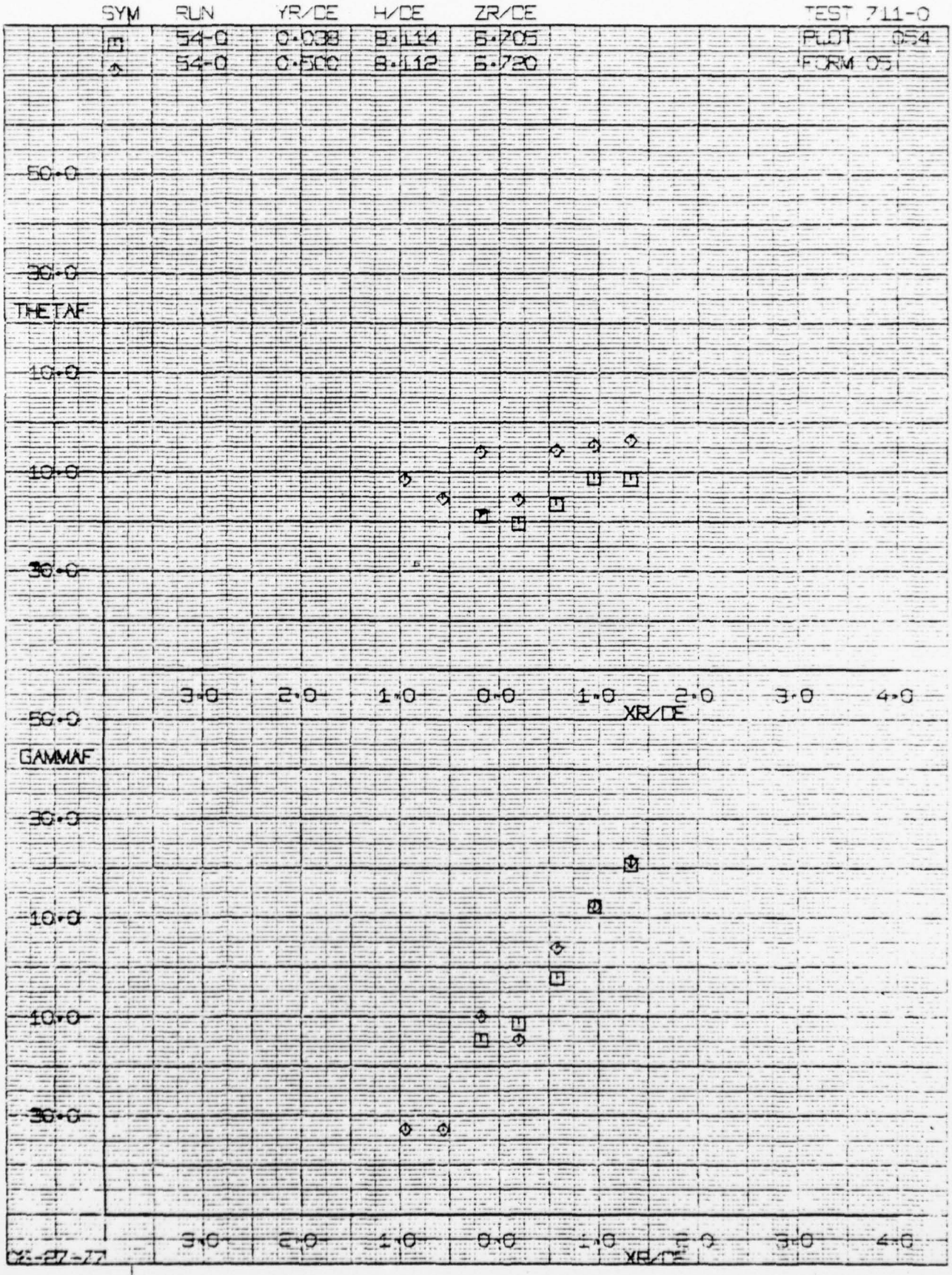

SYM
RUN
YR/DE
Y/DE
ZR/DE
TEST 711-0
PLOT 052
FORM 06
52-0 1.189 3.626 2.144
52-0 0.152 3.620 2.159
52-0 0.303 3.623 2.174
52-0 0.848 3.622 2.182
52-0 1.811 3.623 2.197
52-0 2.833 3.619 2.205
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
F-37-77

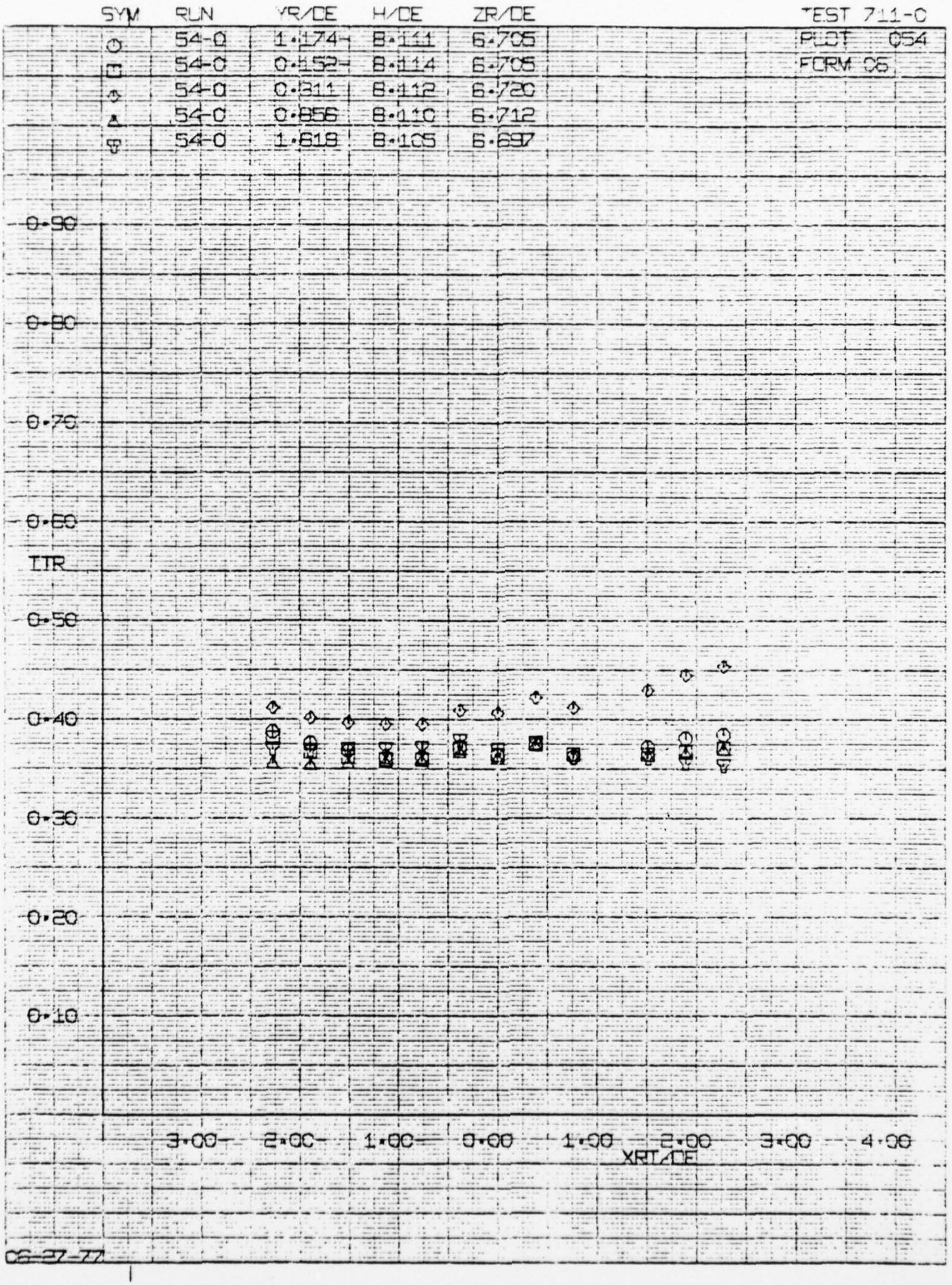

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 053
FORM 04
53-0 0.382 8.110 3.508
53-0 0.000 8.111 3.523
53-0 0.492 8.113 3.530
53-0 1.023 8.113 3.530
53-0 1.992 8.108 3.545
53-0 3.023 8.108 3.553
53-0 4.008 8.109 3.561
MASF
LB_SEC
FT3
1.0
0.8
0.6
0.4
0.2
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
1.0
0
FV
0.8
PSI
0.6
0.4
0.2
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
07-29-77


SYM RUN YR/DE H/DE ZR/DE
53-0 0.992 8.110 3.508
53-0 0.000 8.111 3.523
53-0 0.432 8.113 3.530
53-0 1.023 8.113 3.530
53-0 1.992 8.108 3.545
53-0 3.023 8.108 3.563
TEST 711-0
PLOT C5B
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
YR/DE
06-27-77

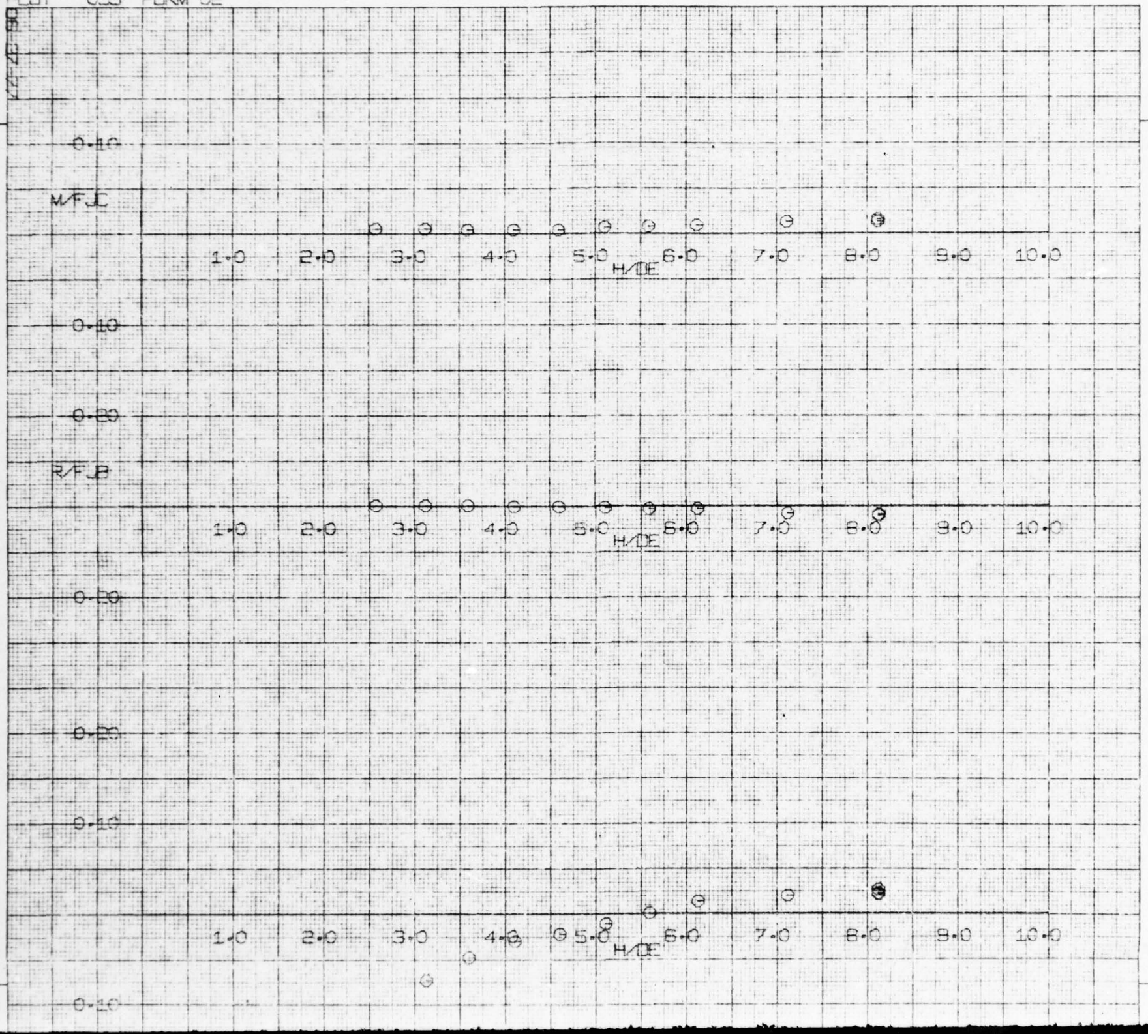

SYM RUN YR/CE H/CE ZR/CE
53-0 1.182 8.110 3.508
53-0 0.189 8.111 3.523
53-0 0.303 8.113 3.530
53-0 0.833 8.113 3.530
53-0 1.803 8.108 3.545
53-0 2.833 8.108 3.553
53-0 3.818 8.109 3.561
TEST 711-0
PLOT 059
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRI/CE
06-27-77

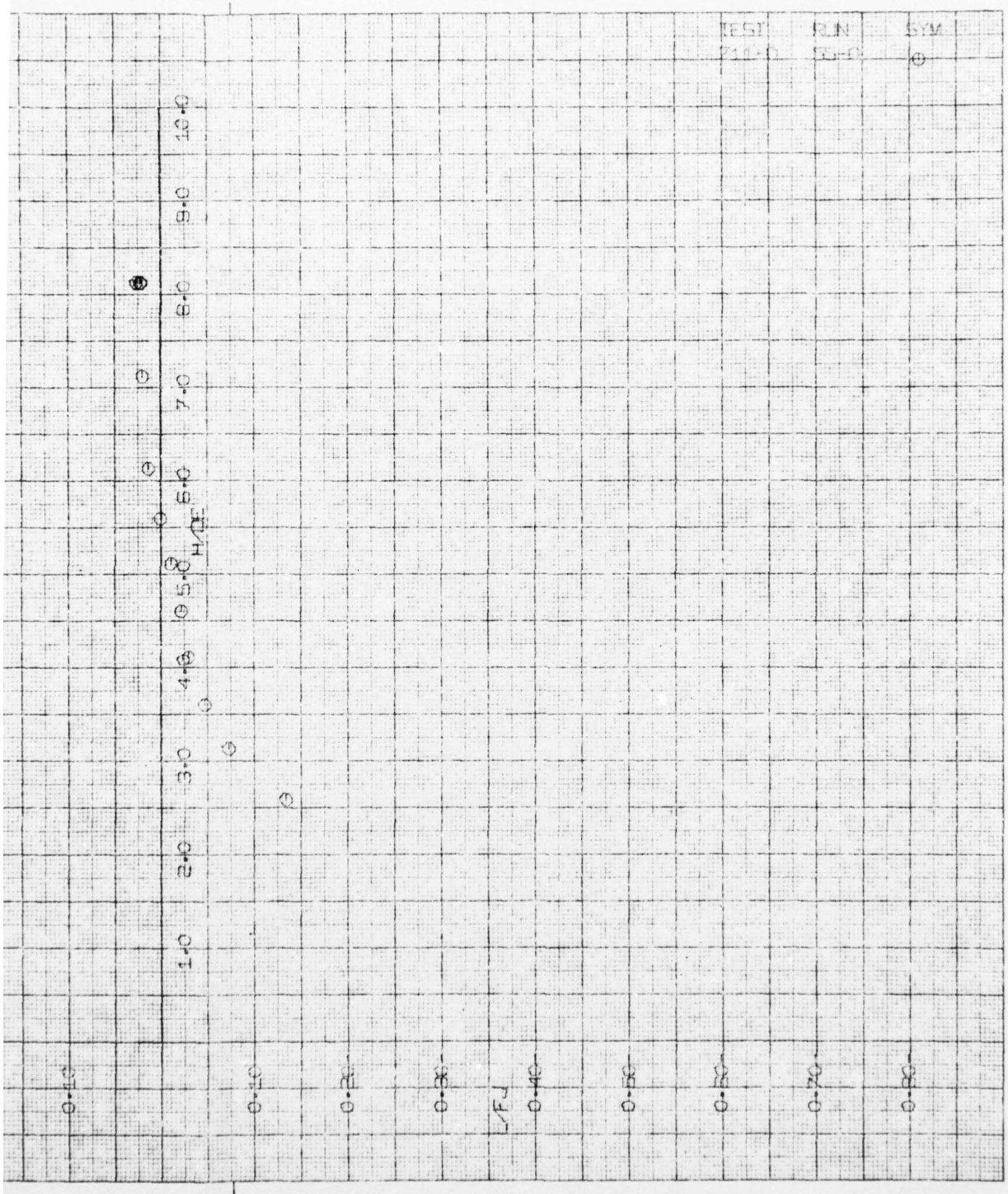

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 054
FORM 04
54-0 0.985 8.111 6.705
54-0 0.038 8.114 6.705
54-0 0.500 8.112 6.720
54-0 1.045 8.110 6.712
54-0 2.008 8.105 6.697
MASF
LB SEC
FT3
XR/DE
Q FV
PSI
CZ-29-77

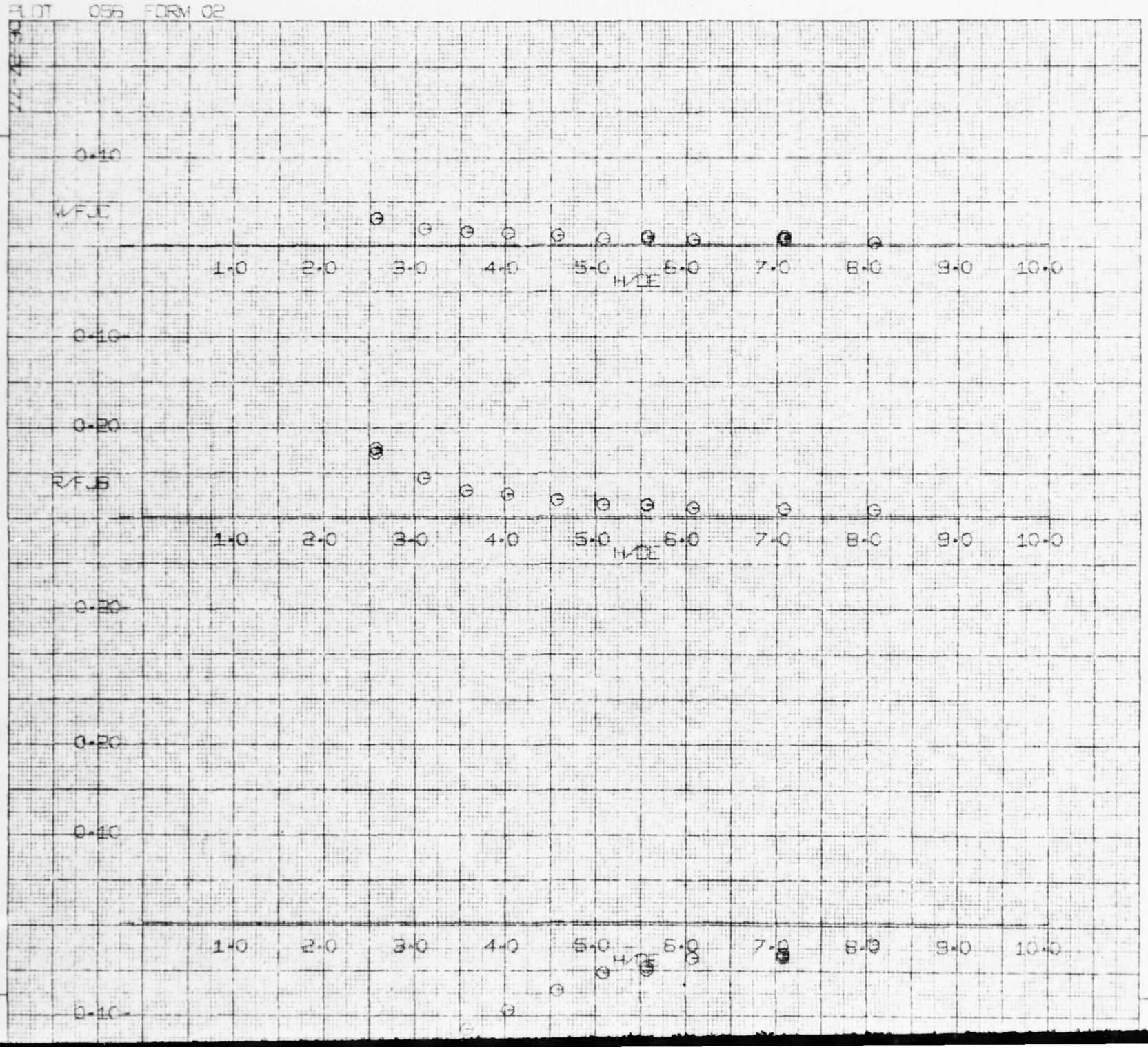

SYM RUN YR/DE H/DE ZR/DE
54-0 0.038 8.114 6.705
54-0 0.500 8.112 6.720
TEST 711-0
PLOT 054
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-27-77

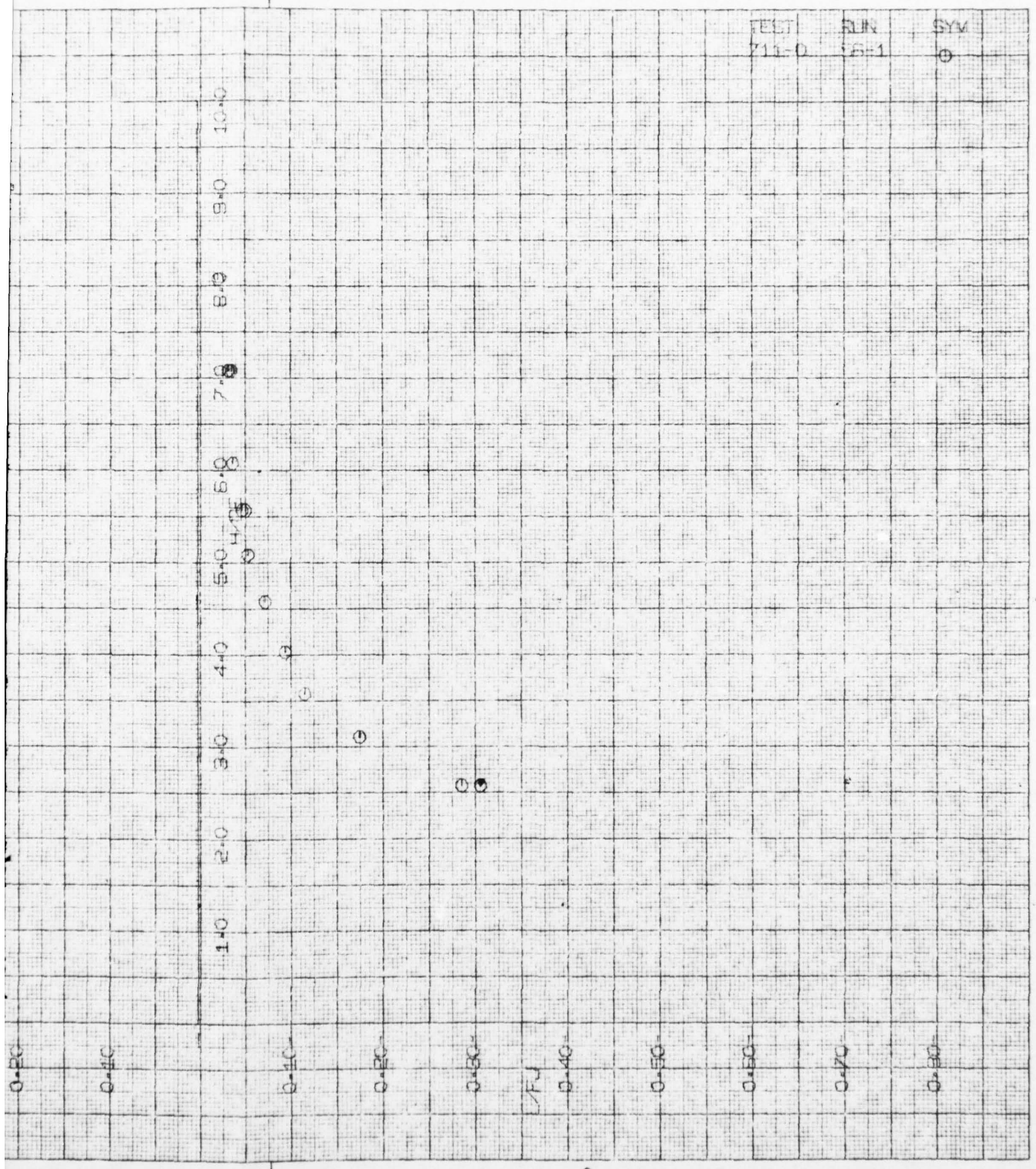

SYM RUN YR/DE H/DE ZR/DE
54-0 1.174 8.111 6.705
54-0 0.152 8.114 6.705
54-0 0.811 8.112 6.720
54-0 0.856 8.110 6.712
54-0 1.618 8.105 6.697
TEST 711-0
PLOT 054
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-27-77

PLOT 055 FORM 02

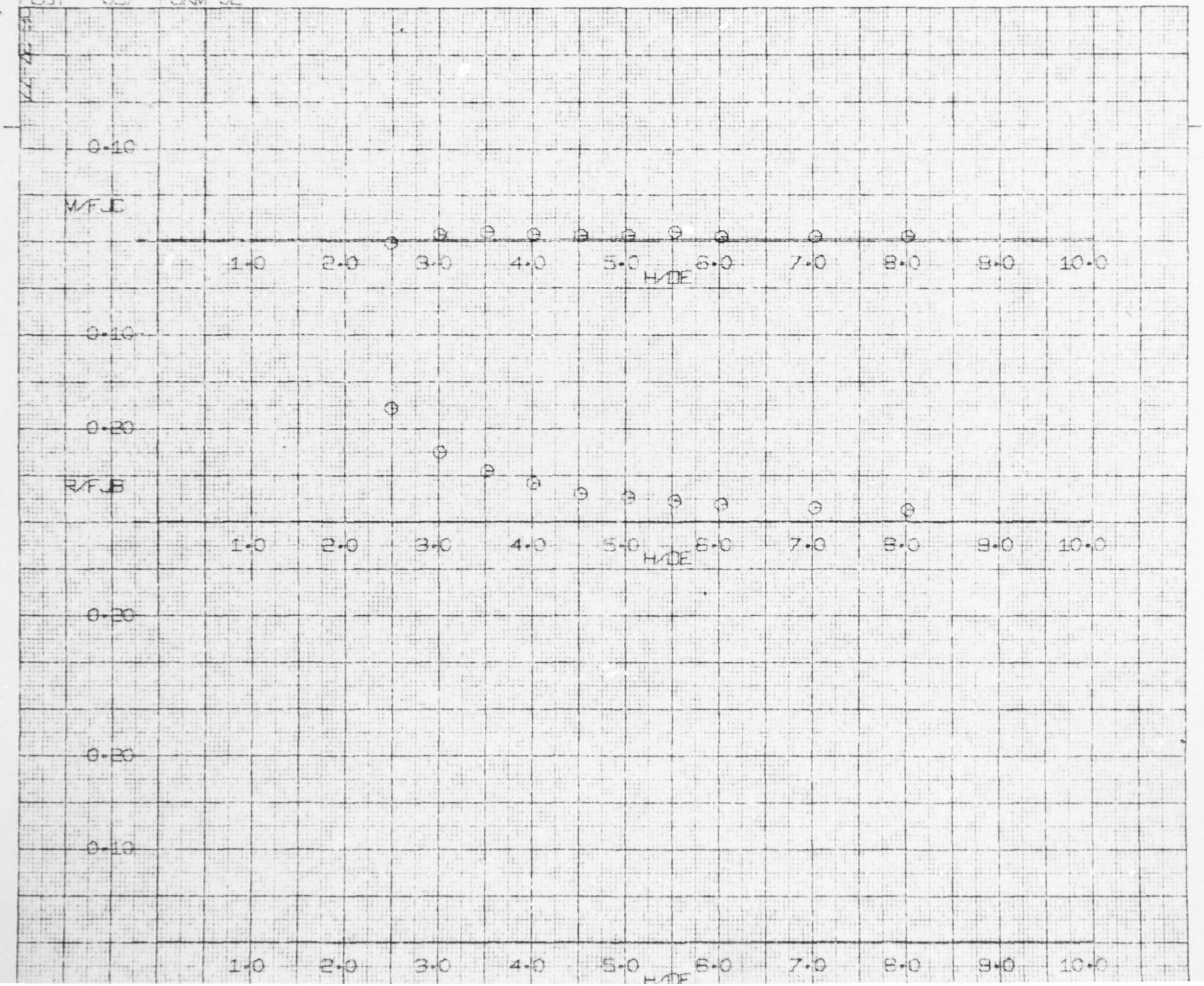


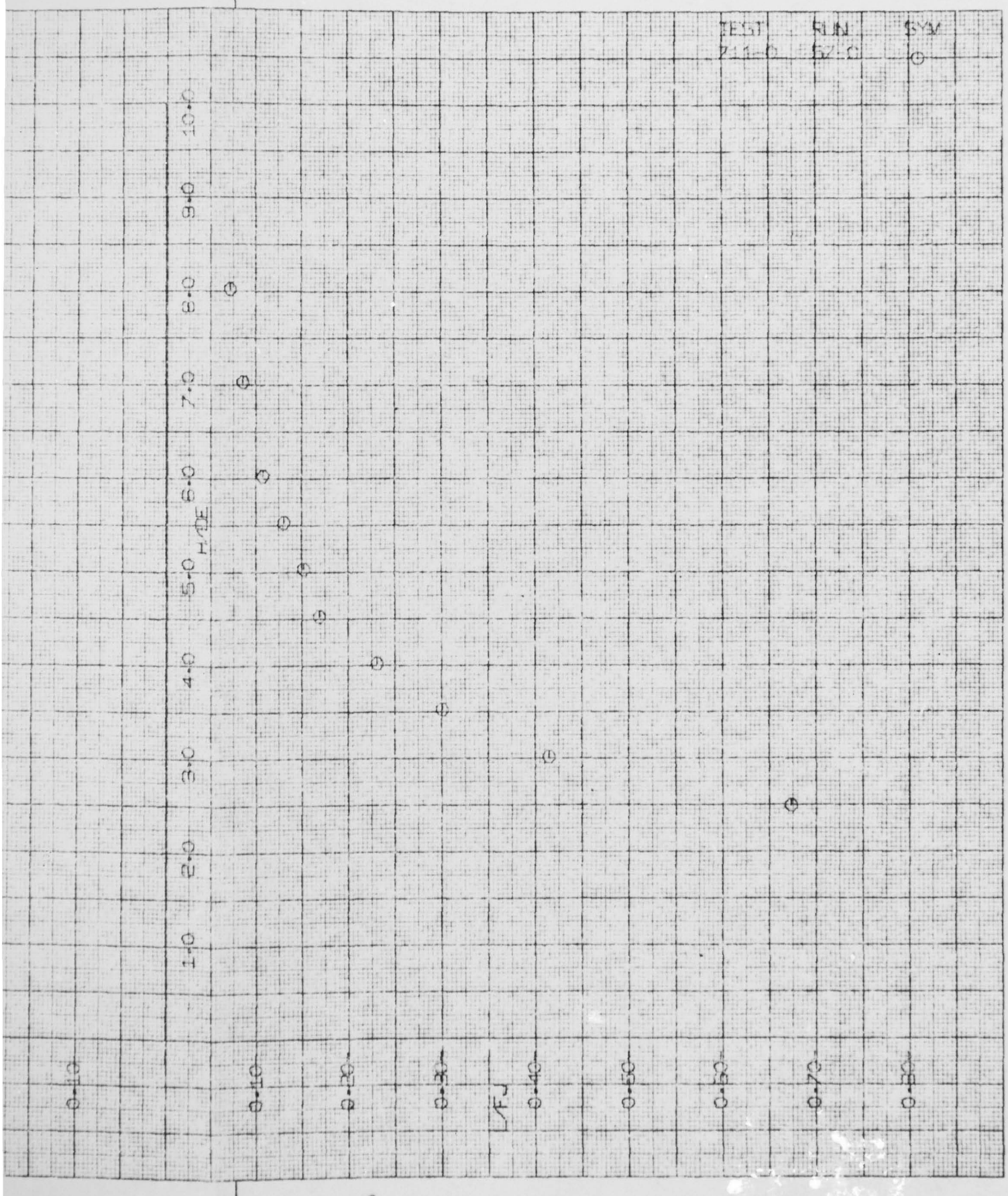

TEST
RUN
SYM
H/DE
L/DE
L/F
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80


PLOT 056 FORM 02
0·10
W/FJC
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
0·10
0·20
R/FJB
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
0·20
0·20
0·10
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
0·10

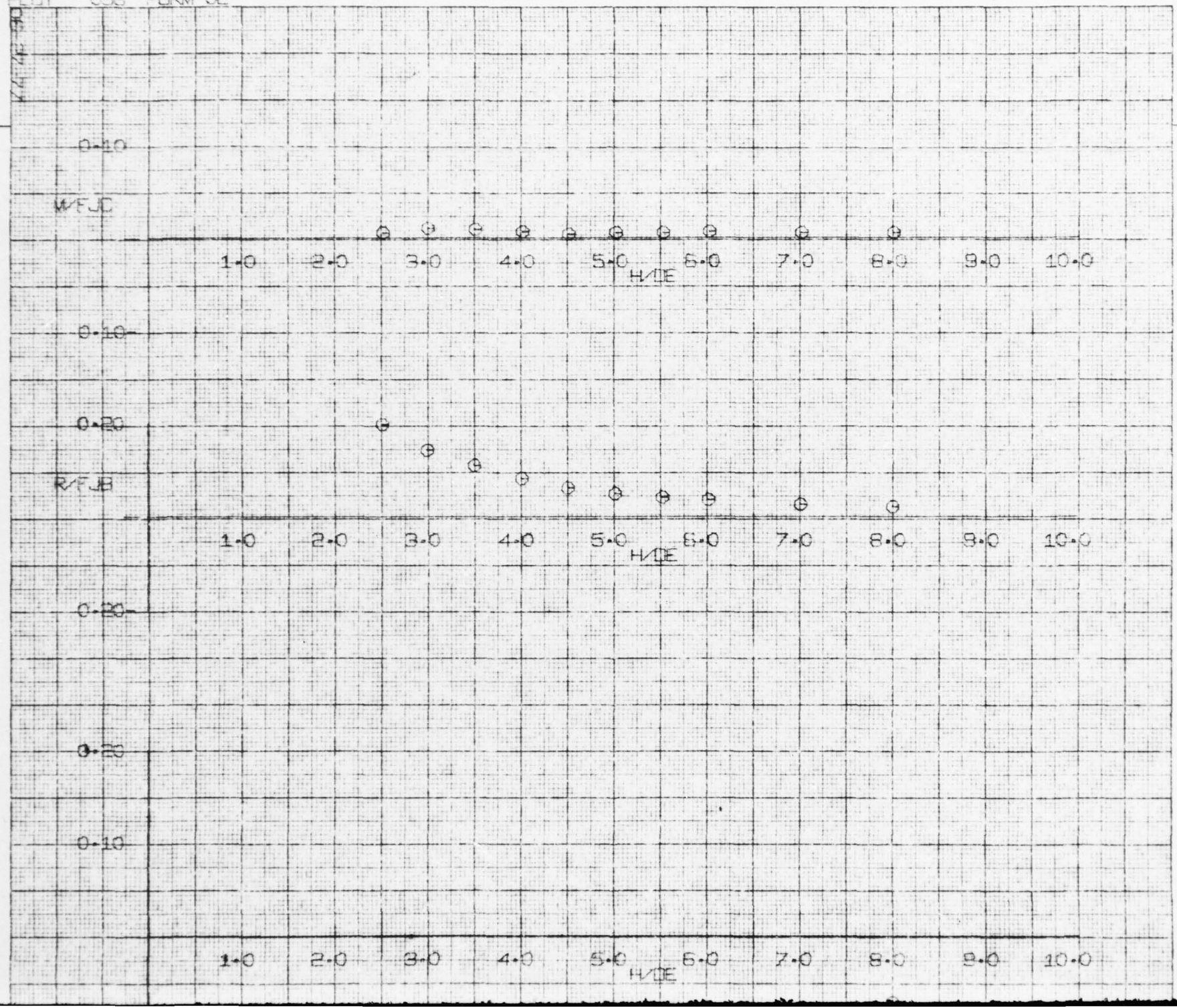

TEST
711-0
RUN
16-1
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.2C
0.4C
0.6C
0.8C
1.0C
0.2C
0.4C
0.6C
L/D
0.4C
0.6C
0.8C
0.7C
0.8C

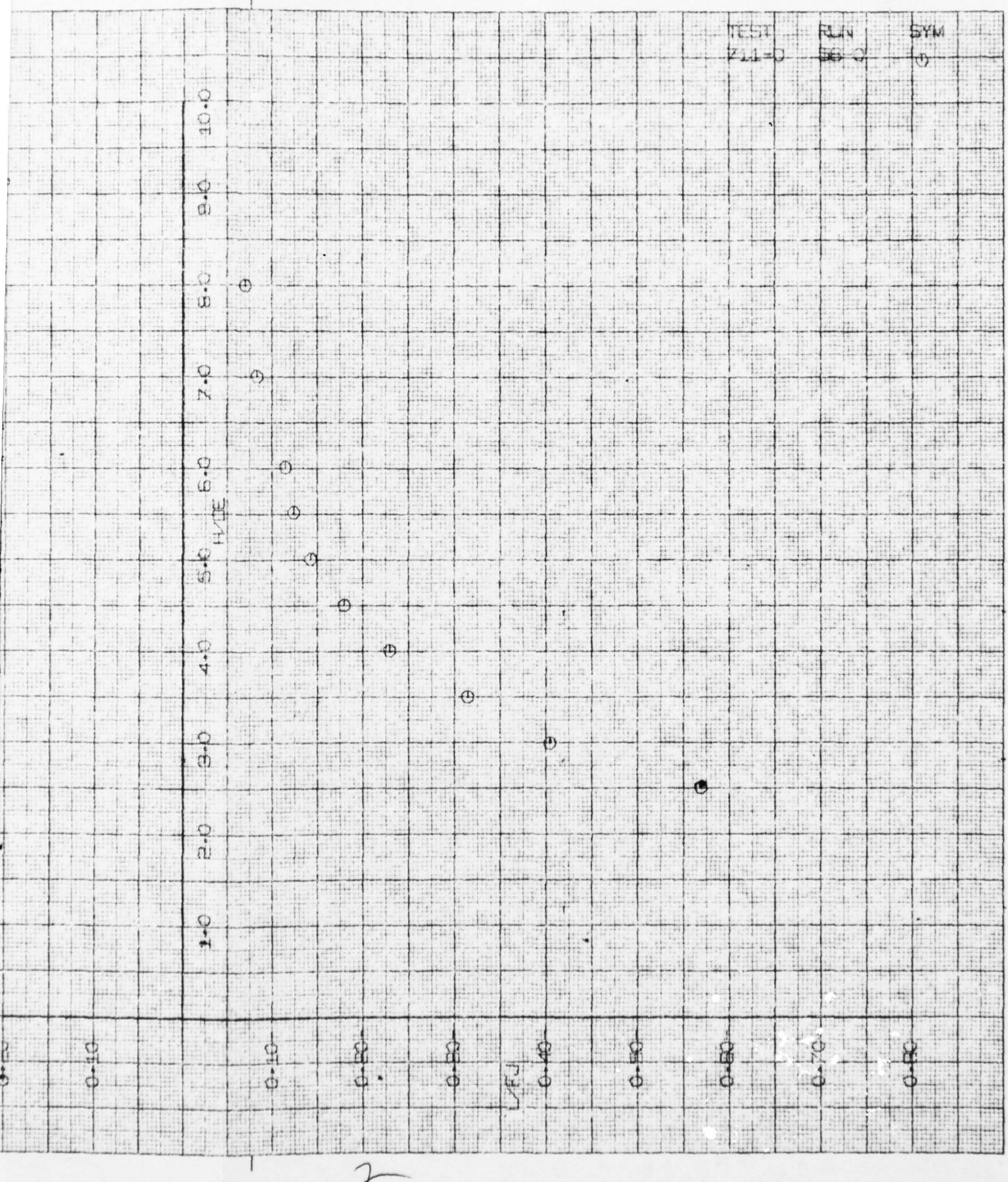
PLOT 057 FORM 02

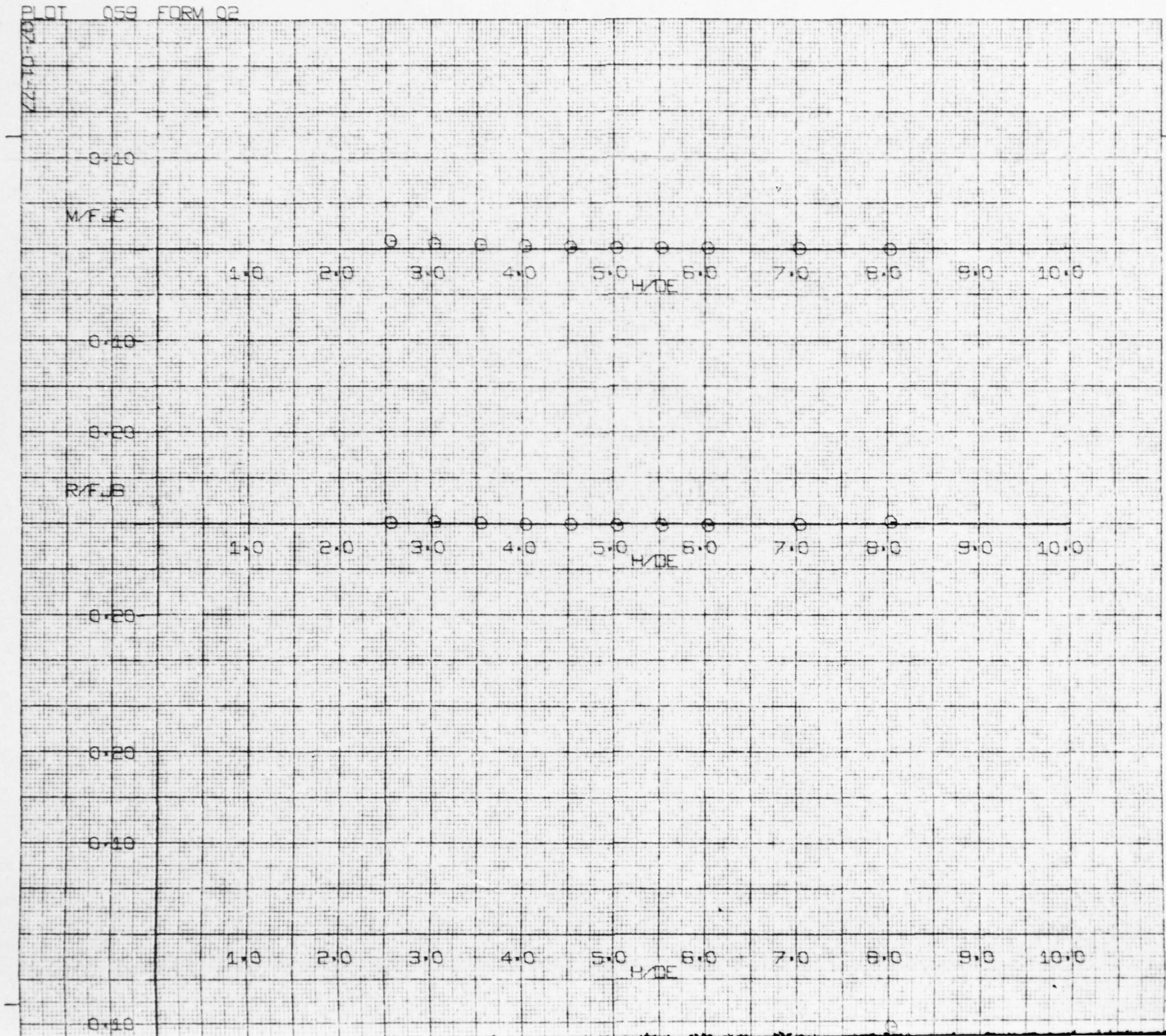


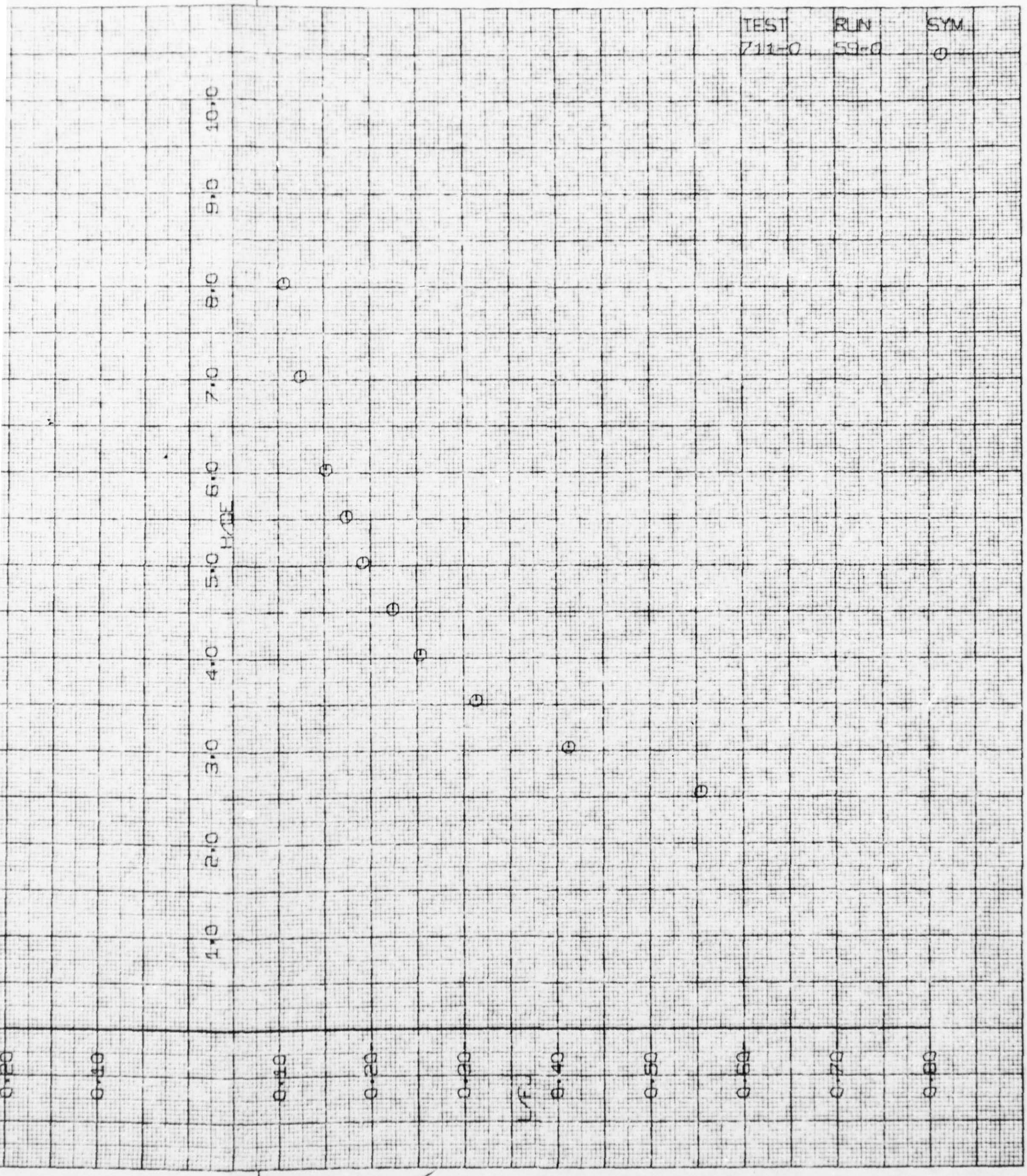

TEST
SUN
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
TIME
L/FJ

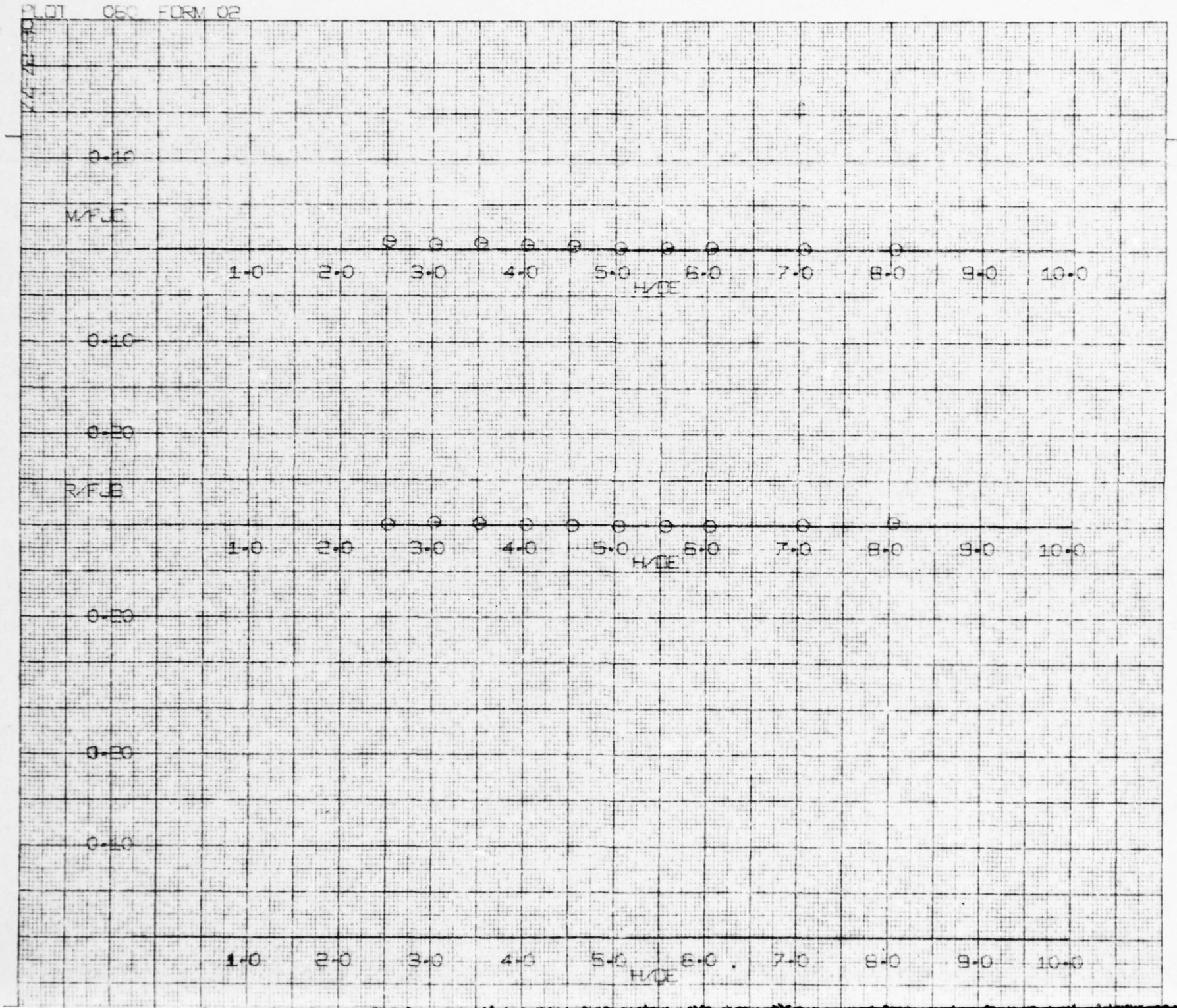
PLOT 058 FORM 02

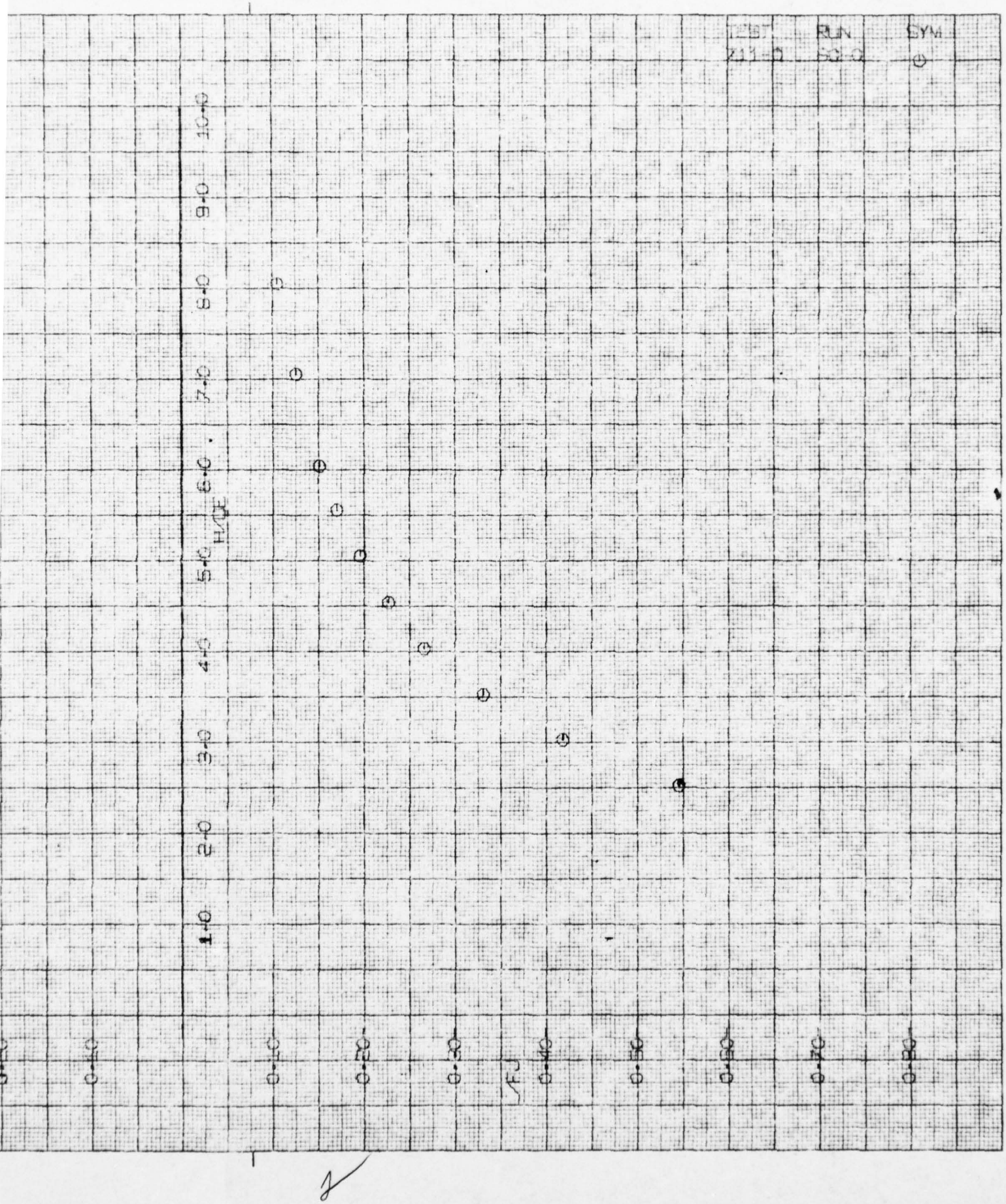



TEST
RUN
SYM
Z_T=0
δE=0
H/DE
L/EJ
10.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80


PLOT 059 FORM 02
ZZ-10-20
0.40
M/F JC
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.40
0.20
R/F JB
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
0.40
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.40

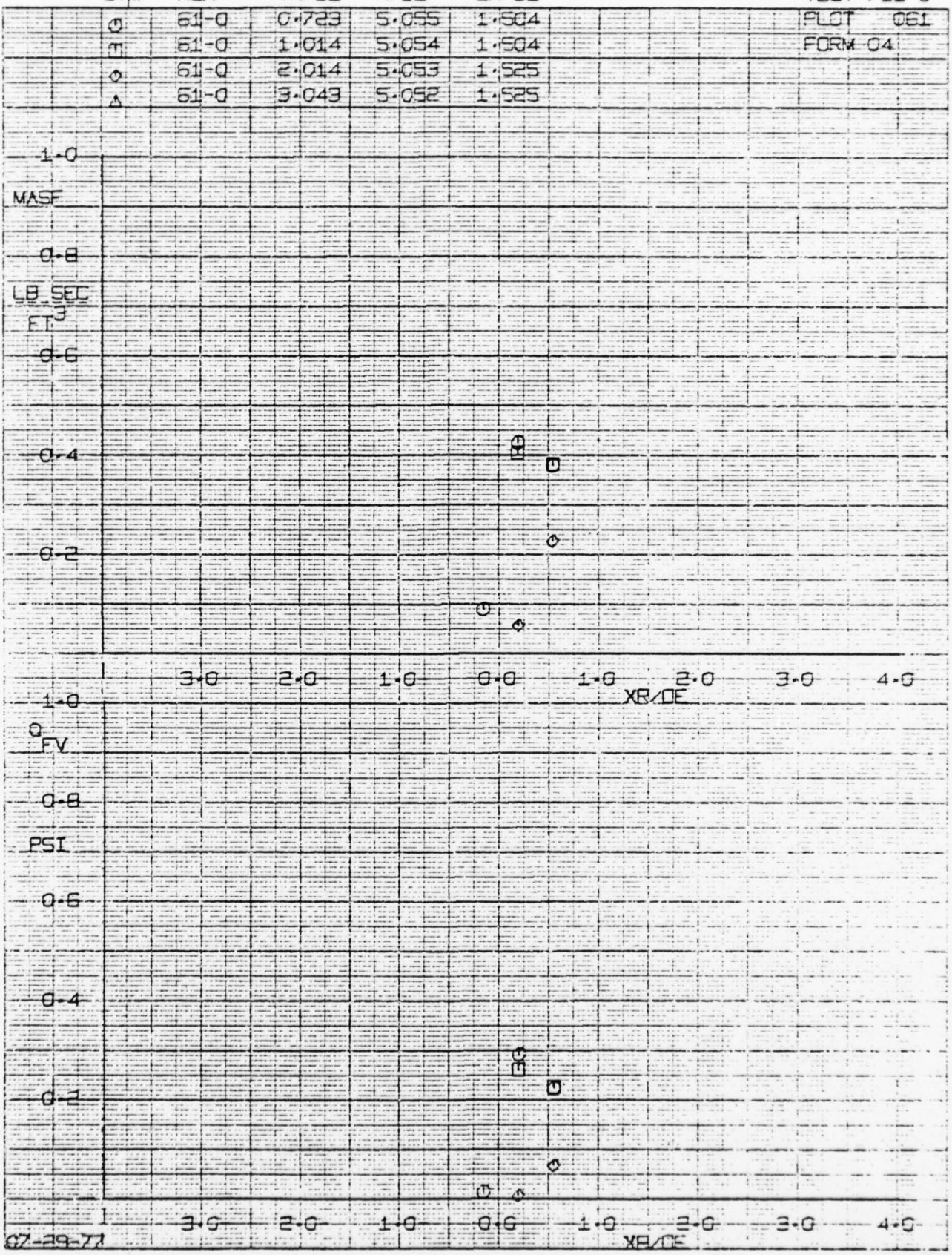

TEST
711-0
RUN
59-0
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
H/DE
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
L/F.J


PLOT 050 FORM 02
M/F JE
0·10
0·20
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
R/F JB
0·30
0·40


TEST
RUN
SYM
H/CE
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0

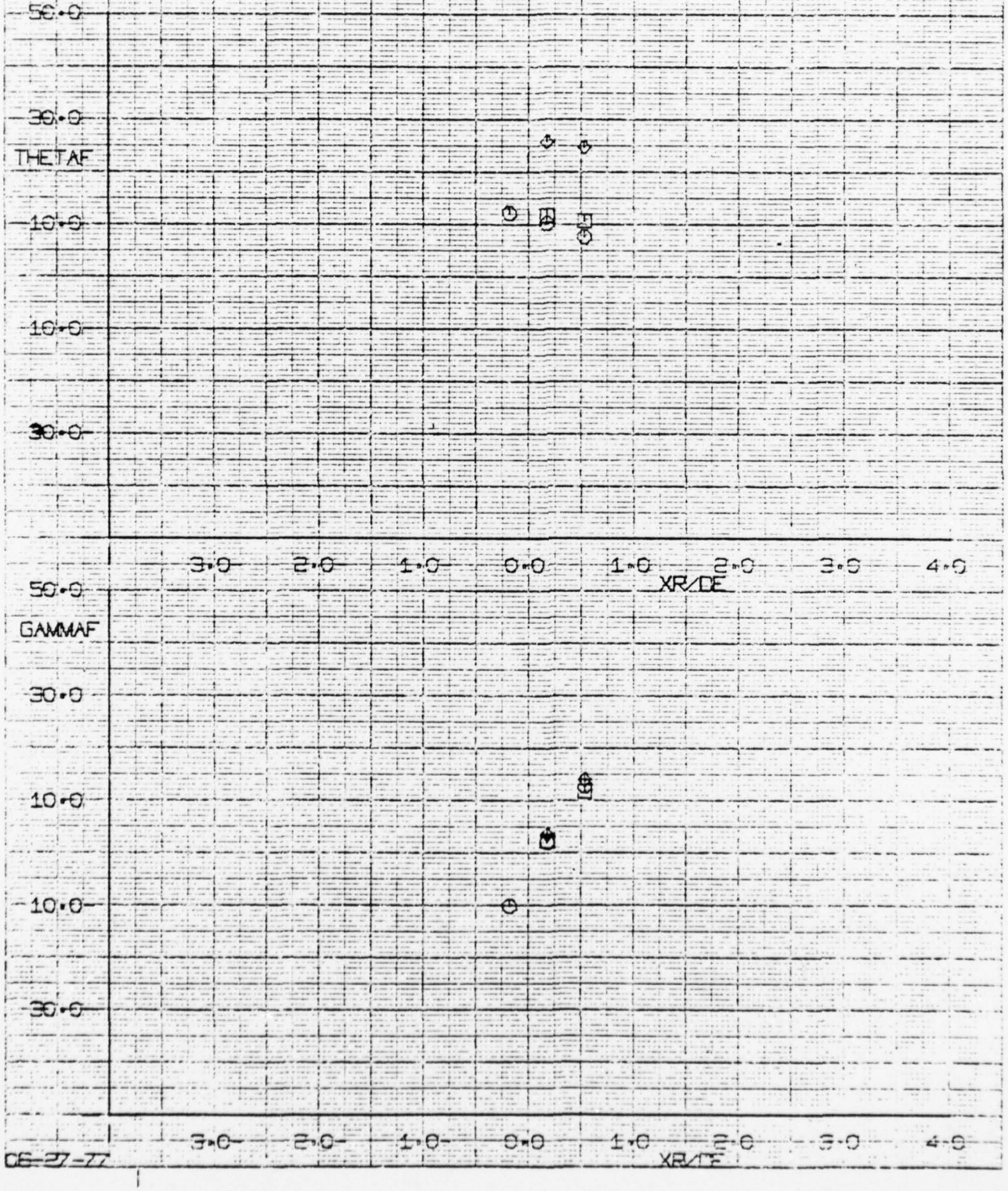
SYM	RUN	YR/DE	H/DE	ZR/DE
○	61-0	0.723	5.055	1.504
□	61-0	1.014	5.054	1.504
◇	61-0	2.014	5.053	1.525
△	61-0	3.043	5.052	1.525

TEST 711-0
PLOT 061
FORM 04

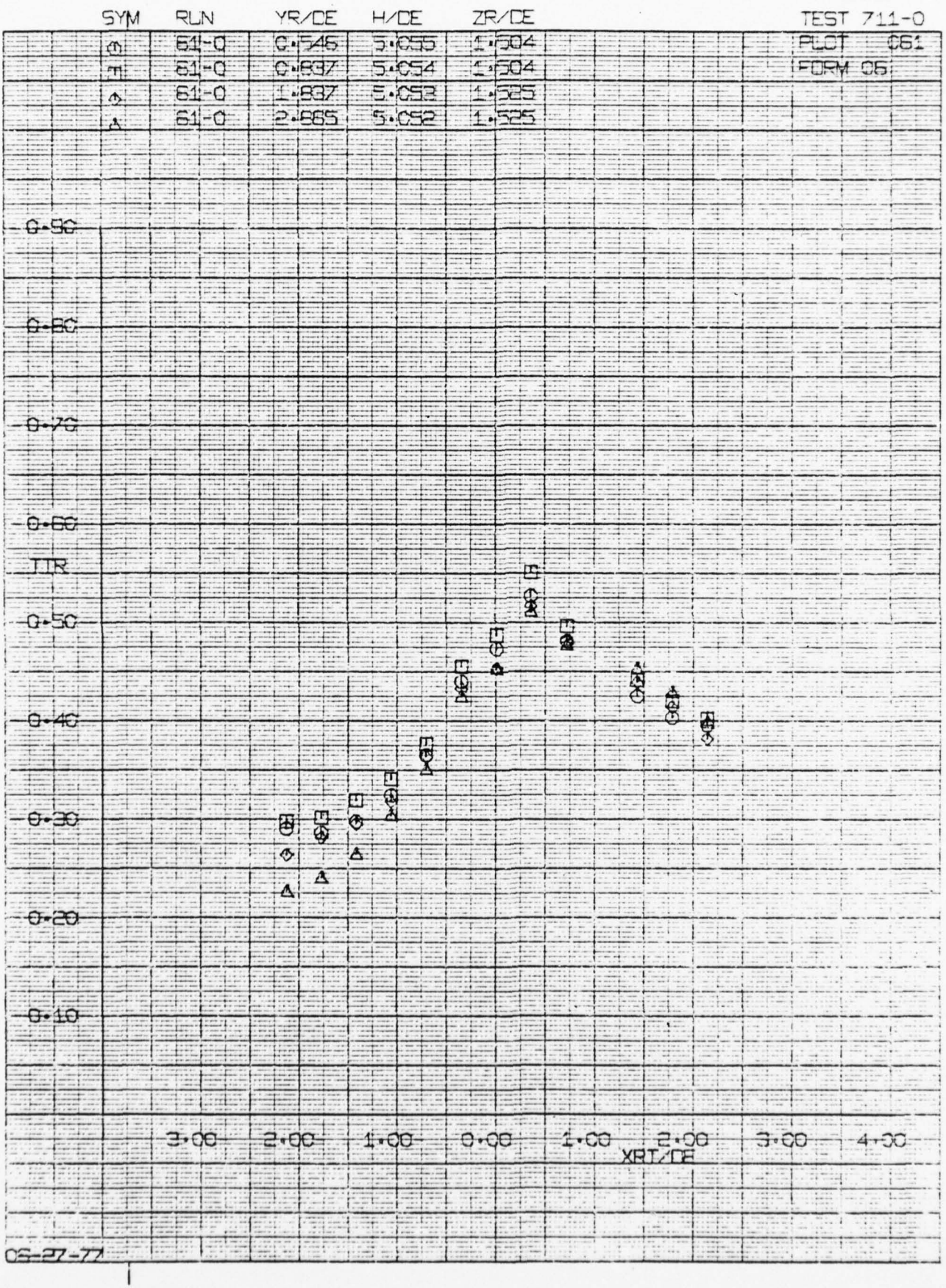


SYM	RUN	YR/DE	H/DE	ZR/DE
⊙	61-0	0.723	5.055	1.504
□	61-0	1.014	5.054	1.504
◇	61-0	2.014	5.053	1.525

TEST 711-0
PLOT 061
FORM 05

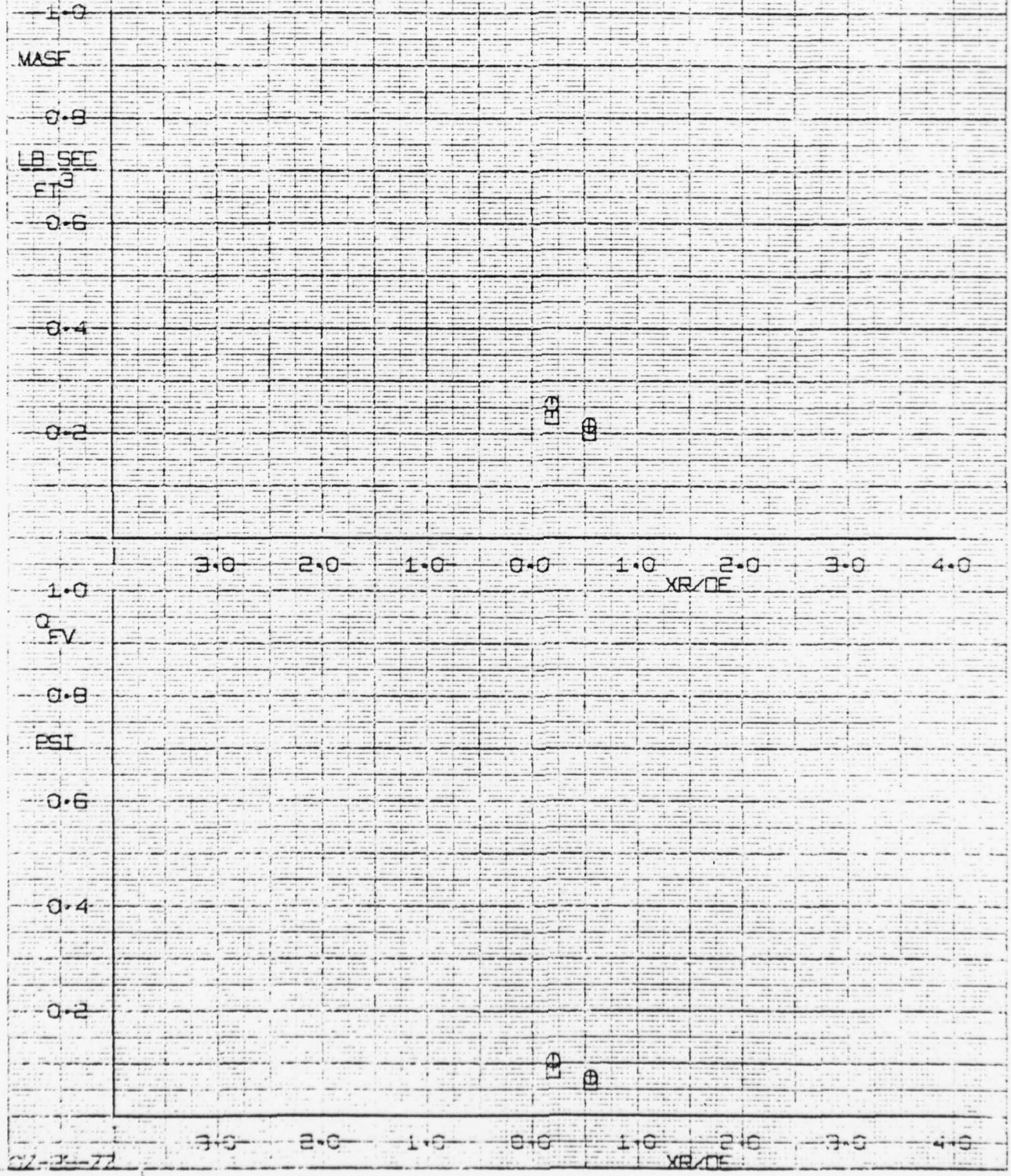


DE-27-77

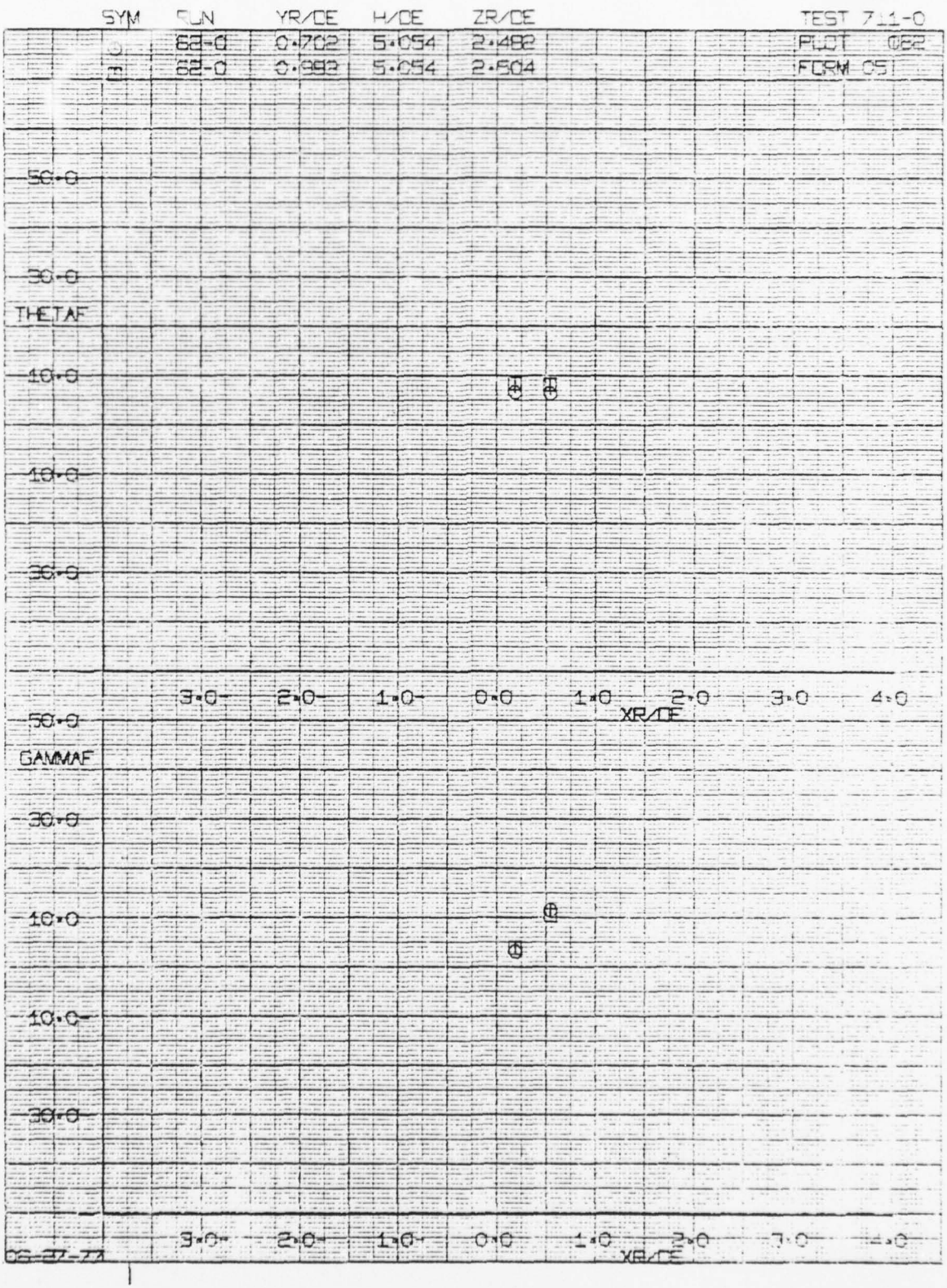

SYM RUN YR/DE H/DE ZR/DE
61-0 0.545 5.055 1.504
61-0 0.837 5.054 1.504
61-0 1.837 5.053 1.525
61-0 2.865 5.052 1.525
TEST 711-0
PLOT C61
FORM 05
0.90
0.80
0.70
0.60
TIR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
05-27-77

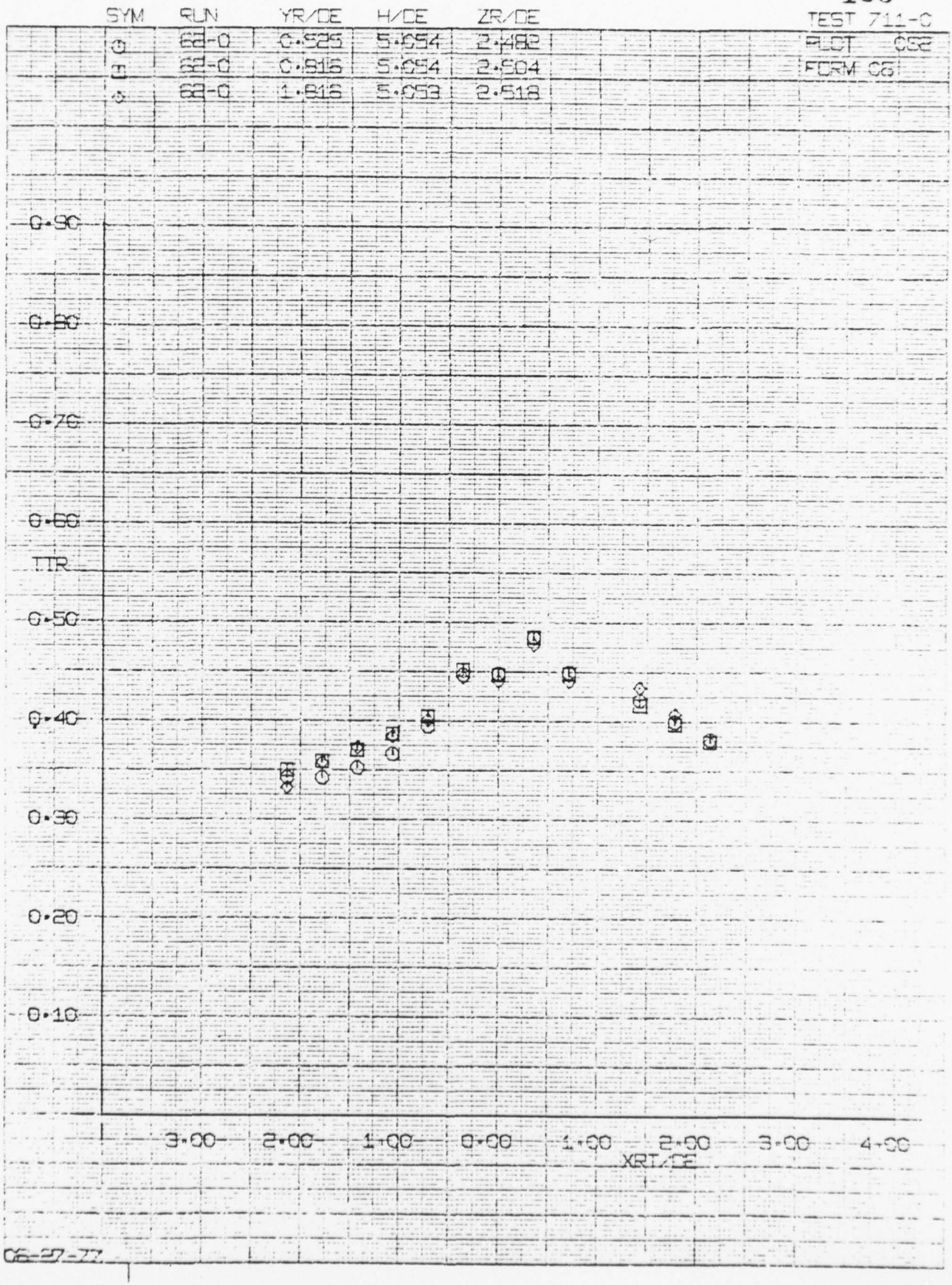
SYM	RUN	YR/DE	H/DE	ZR/DE
○	62-0	0.702	5.054	2.482
□	62-0	0.993	5.054	2.504
◇	62-0	1.393	5.053	2.518

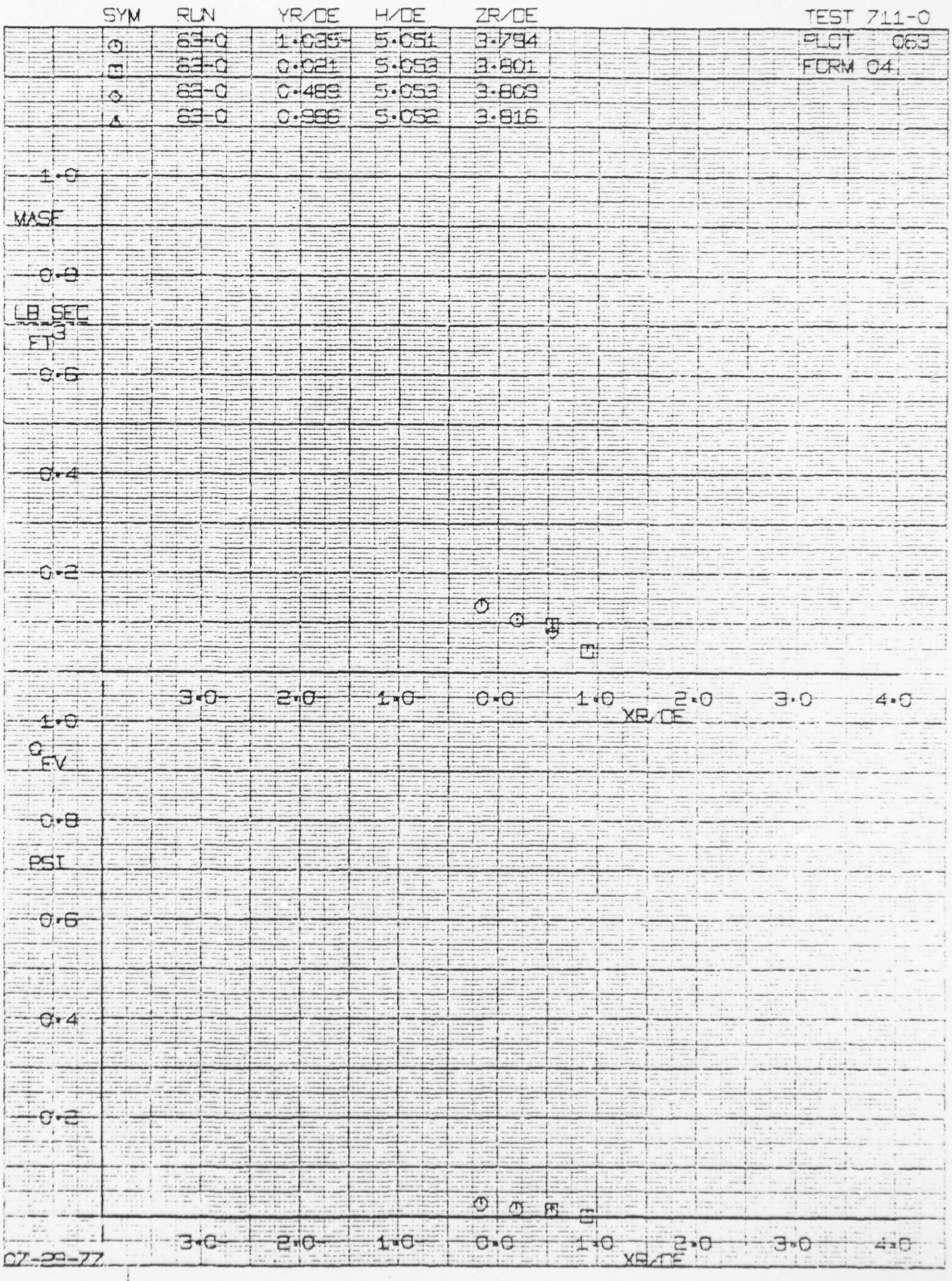
TEST 711-0
PLOT 062
FORM 04

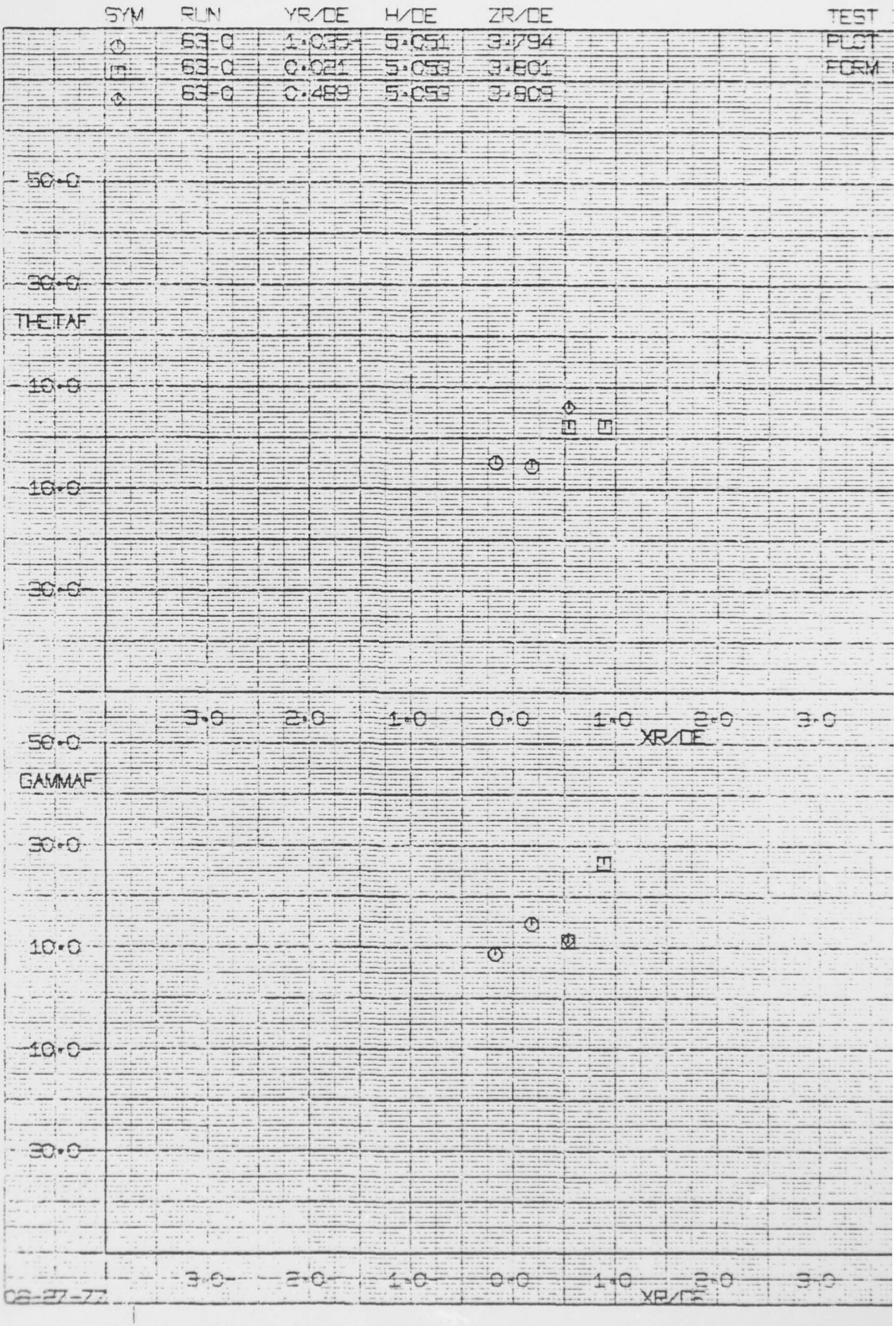


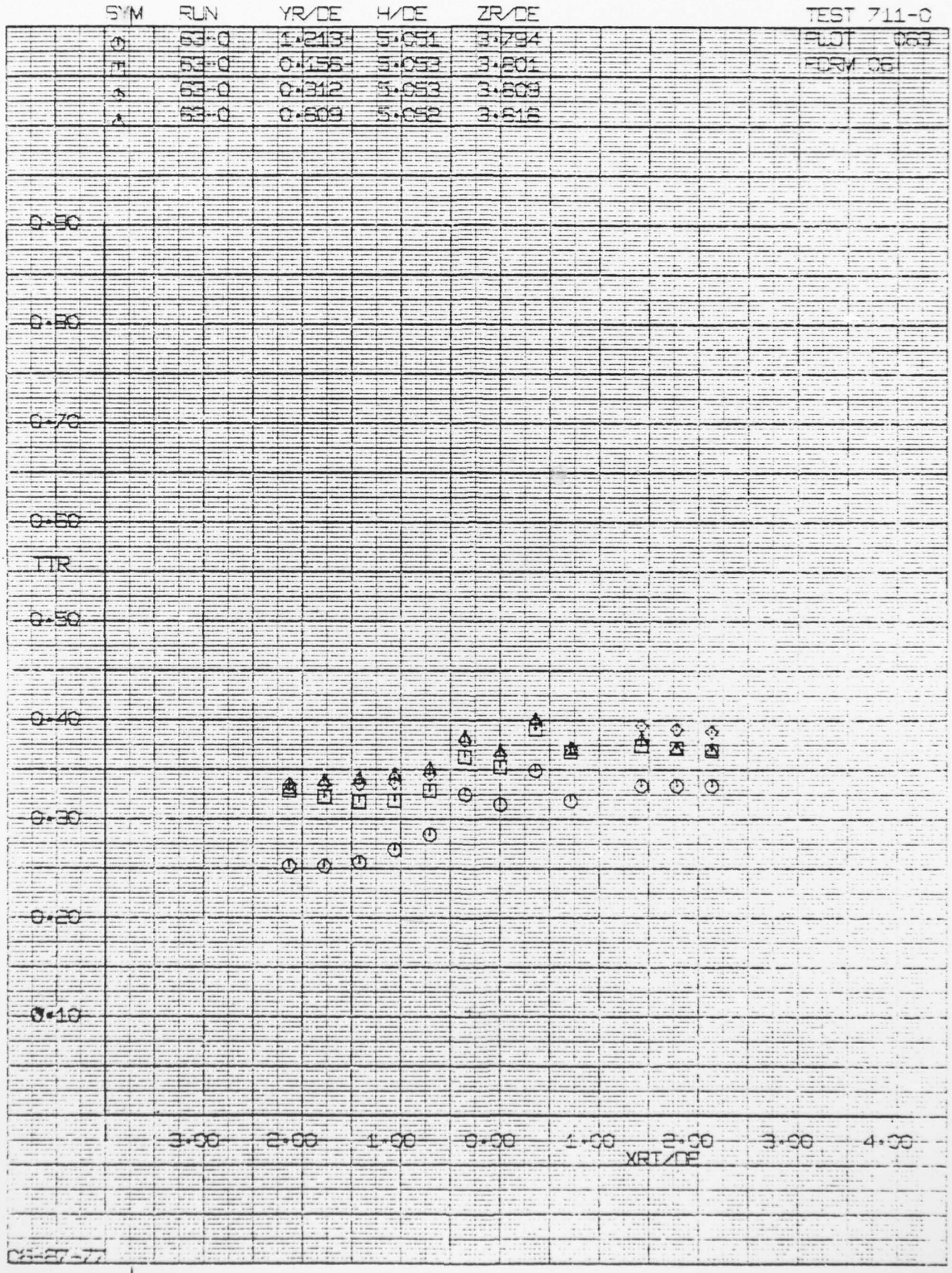
CZ-2--77


SYM RUN YR/DE H/DE ZR/DE
62-0 0.702 5.054 2.482
62-0 0.992 5.054 2.504
TEST 711-0
PLOT 082
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77


SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-0
PLOT 052
FORM 06
62-0 0.525 5.654 2.482
62-0 0.816 5.654 2.504
62-0 1.816 5.653 2.518
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/CE
06-27-77

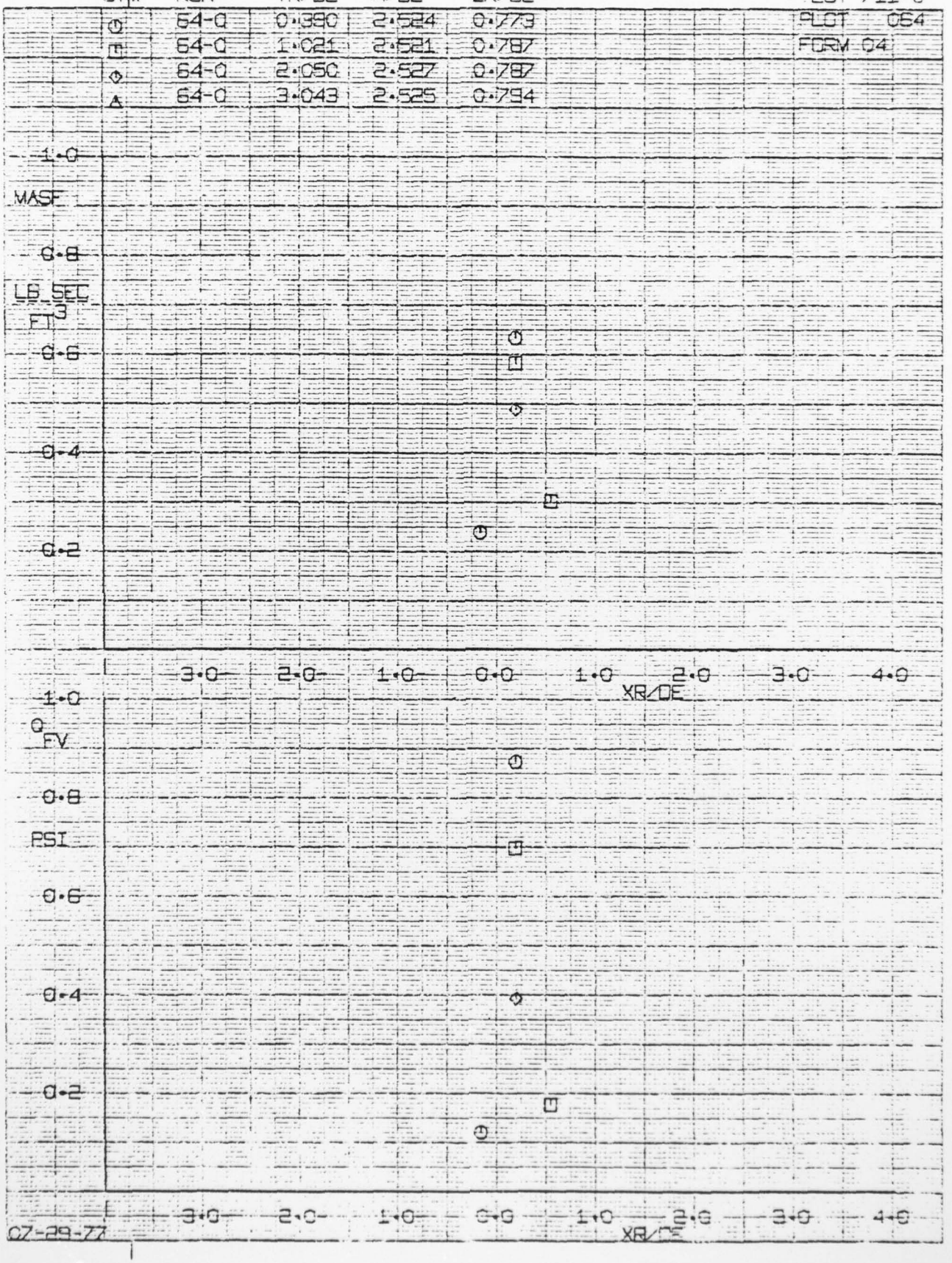

SYM RUN YR/DE H/DE ZR/DE
63-0 1.035 5.051 3.794
63-0 0.021 5.053 3.801
63-0 0.489 5.053 3.803
63-0 0.986 5.052 3.816
TEST 711-0
PLOT 063
FORM 04
1.0
MASE
0.8
LB SEC
FT3
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
1.0
FV
0.8
PSI
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
07-29-77

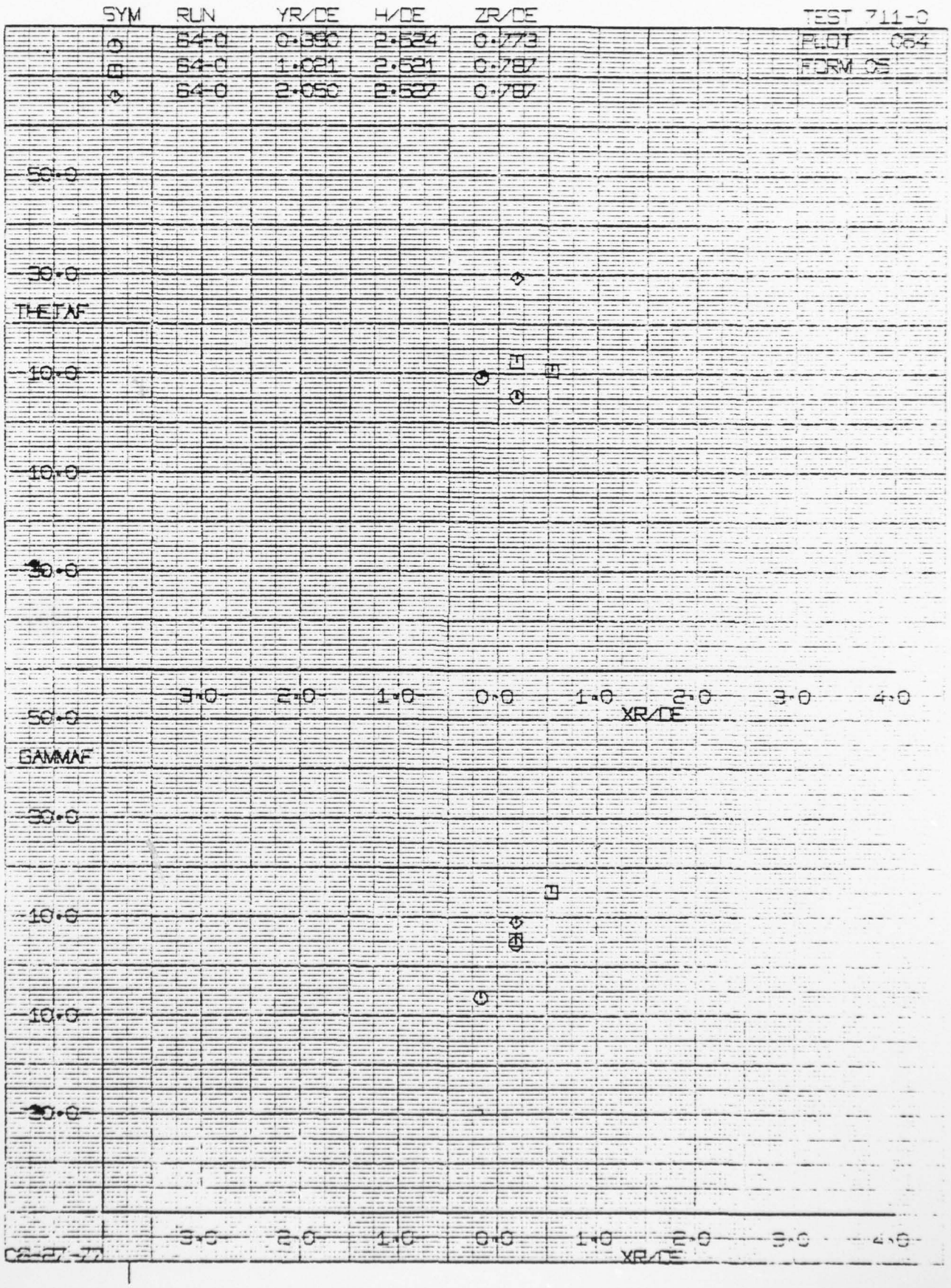

SYM RUN YR/DE H/DE ZR/DE TEST
63-0 1.035 5.051 3.794 PLOT
63-0 0.021 5.053 3.801 FORM
63-0 0.489 5.053 3.809
50.0
30.0
THETAF
10.0
-10.0
-30.0
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0
XR/DE
50.0
GAMMAF
30.0
10.0
-10.0
-30.0
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0
XR/DE
08-27-77


SYM RUN YR/DE H/DE ZR/DE
63-0 1.213 5.051 3.794
63-0 0.156 5.053 3.201
63-0 0.312 5.053 3.603
63-0 0.609 5.052 3.816
TEST 711-0
PLOT 063
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
CS-87-77

SYM	RUN	YR/DE	H/DE	ZR/DE
◯	64-0	0.390	2.524	0.773
□	64-0	1.021	2.521	0.787
◇	64-0	2.050	2.527	0.787
△	64-0	3.043	2.525	0.794

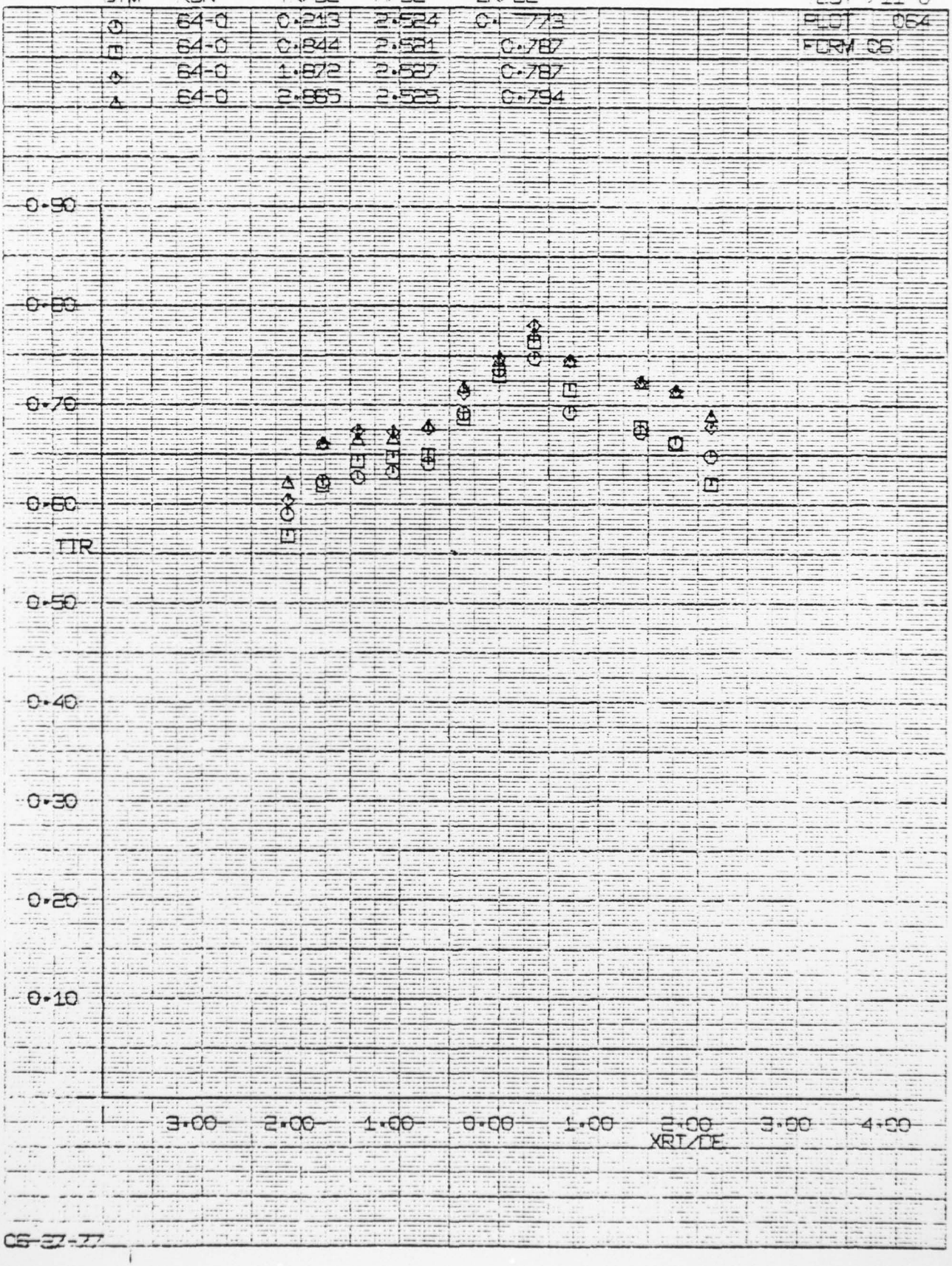
TEST 711-0
PLOT 064
FORM 04



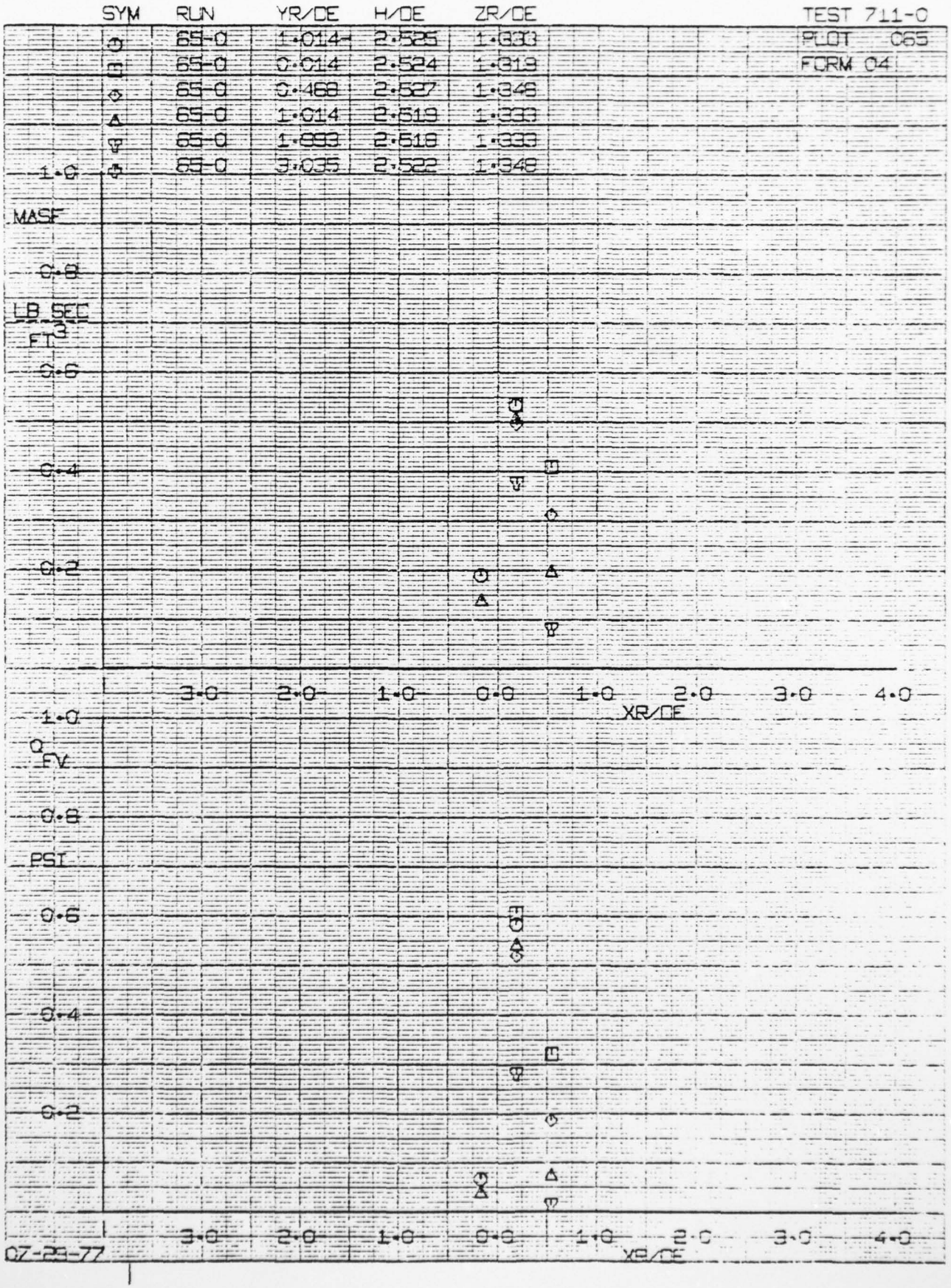

SYM RUN YR/DE H/DE ZR/DE
64-0 0.390 2.524 0.773
64-0 1.021 2.621 0.787
64-0 2.050 2.527 0.787
TEST 711-0
PLOT 064
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
C2-27-77

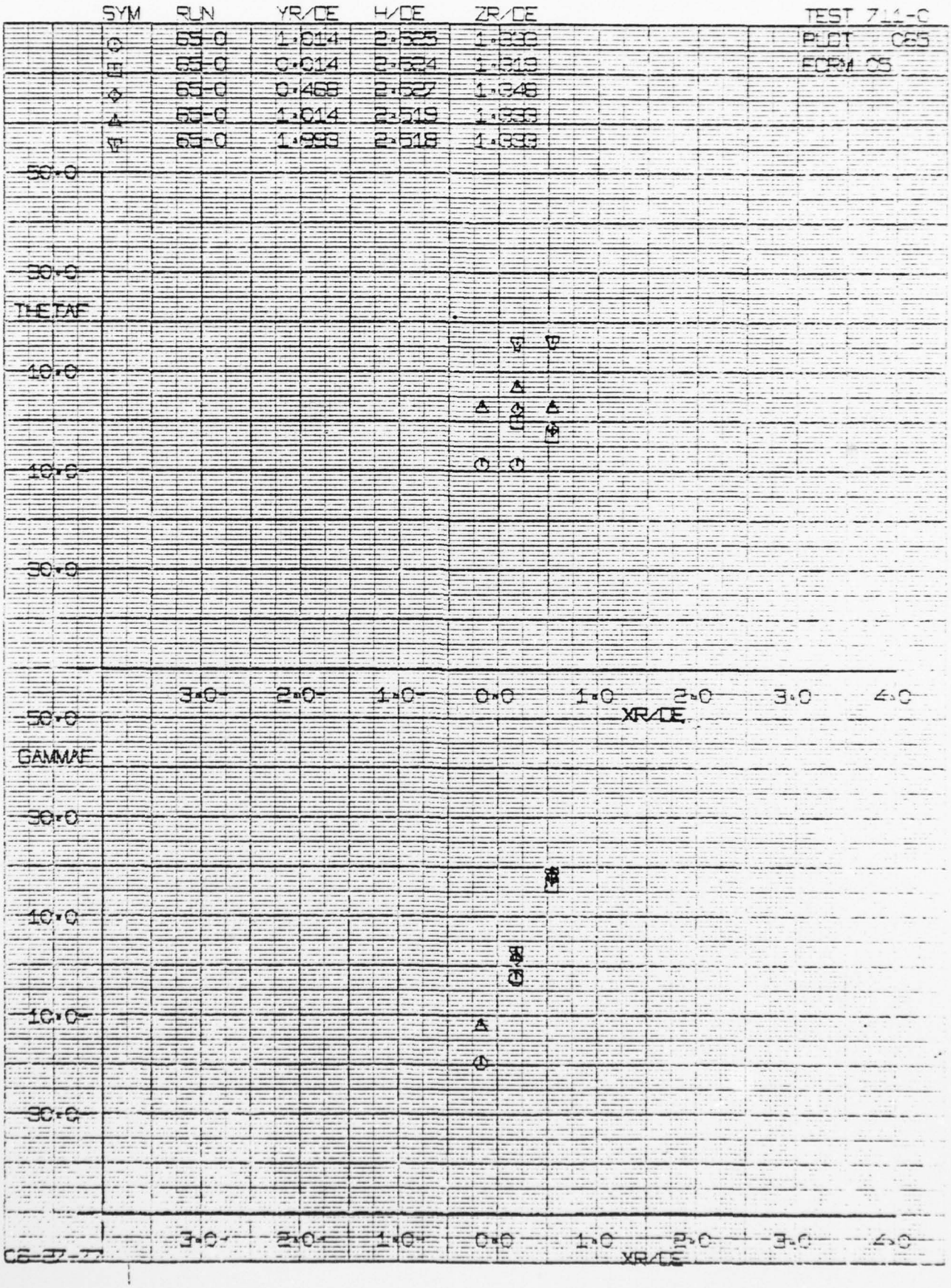
TEST 711-0
PLOT 064
FORM 86

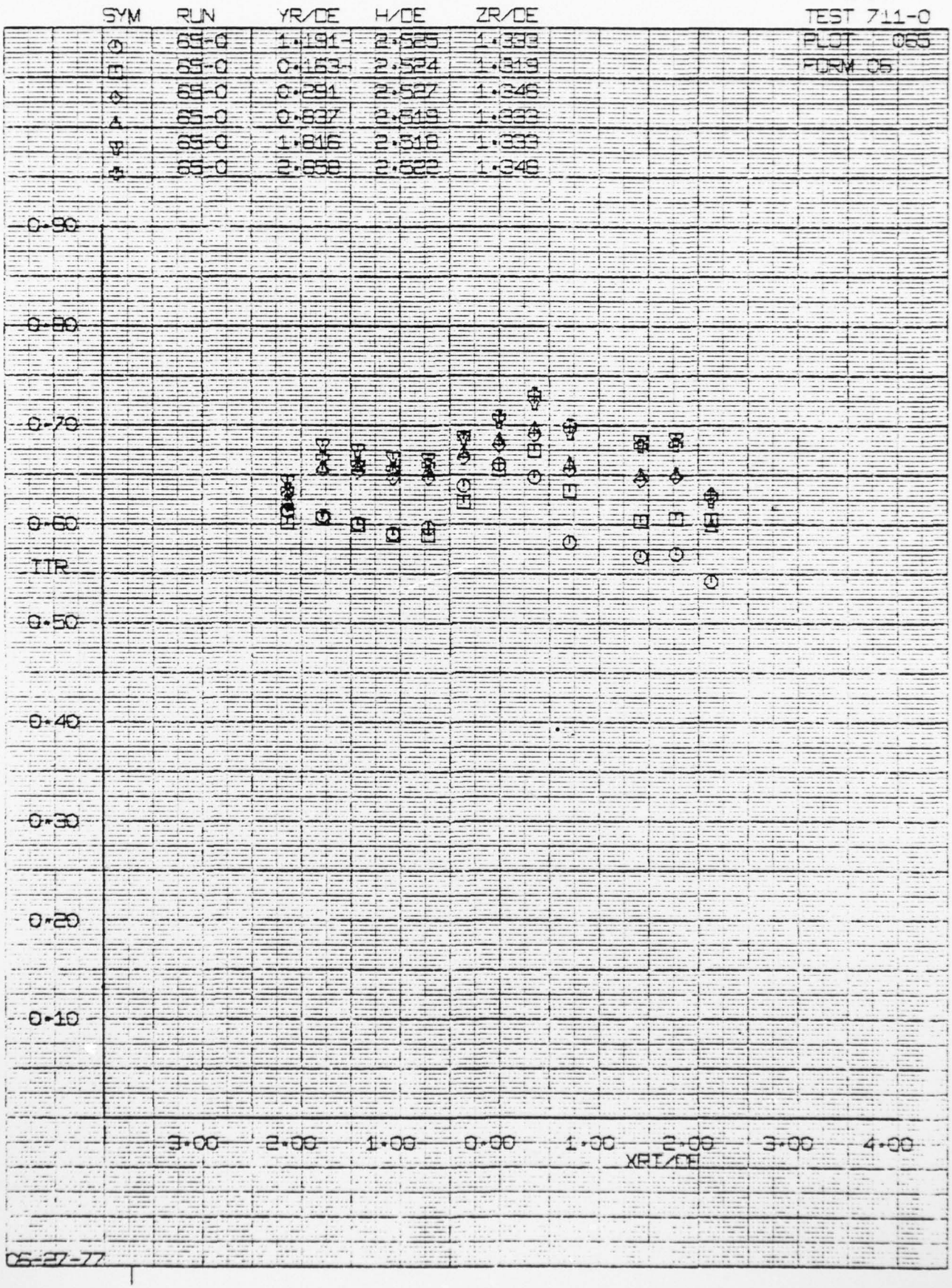
SYM	RUN	YR/DE	H/DE	ZR/DE
○	64-0	0.213	2.524	0.773
□	64-0	0.844	2.521	0.787
◇	64-0	1.872	2.527	0.787
△	64-0	2.865	2.525	0.794

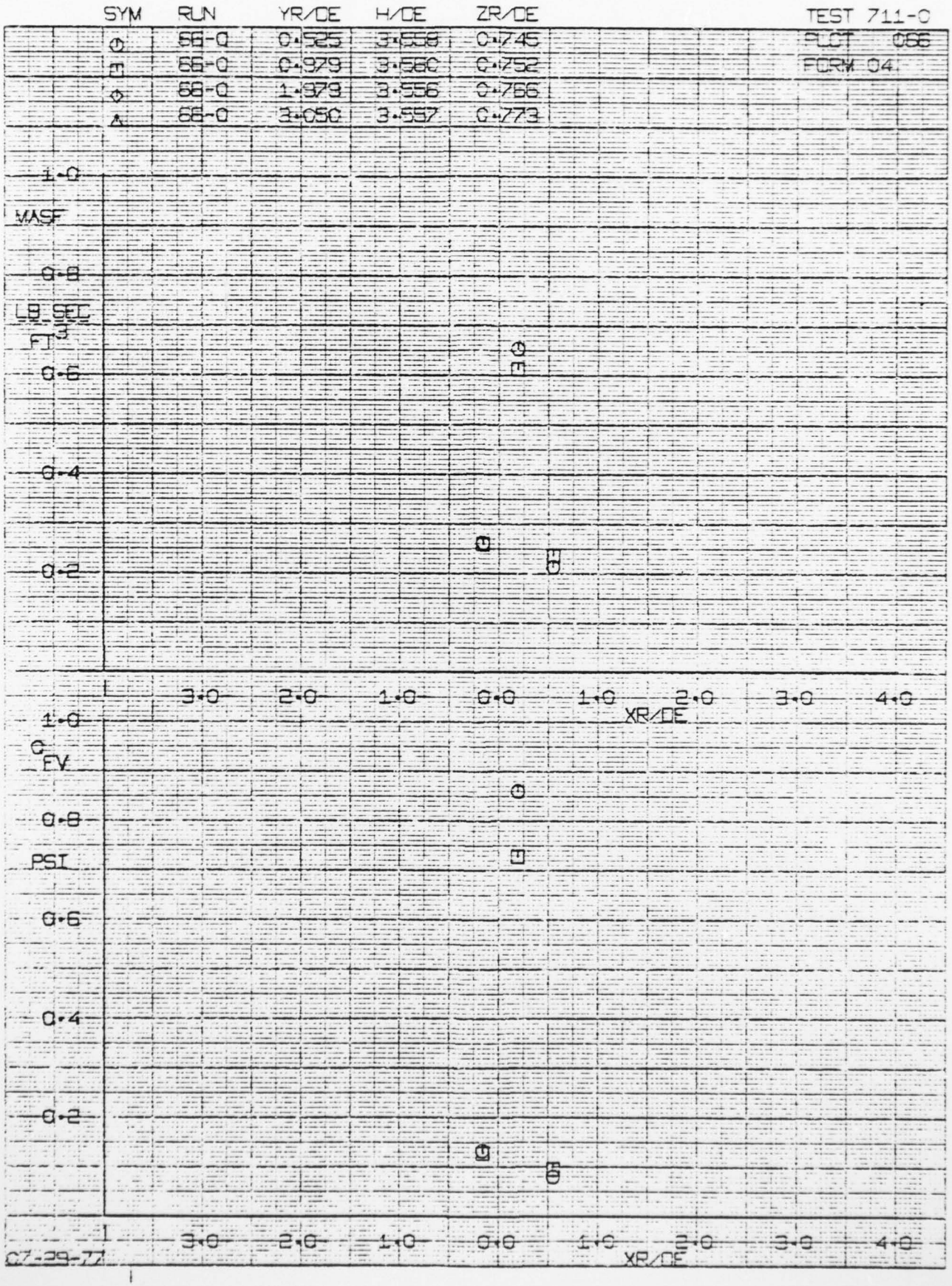


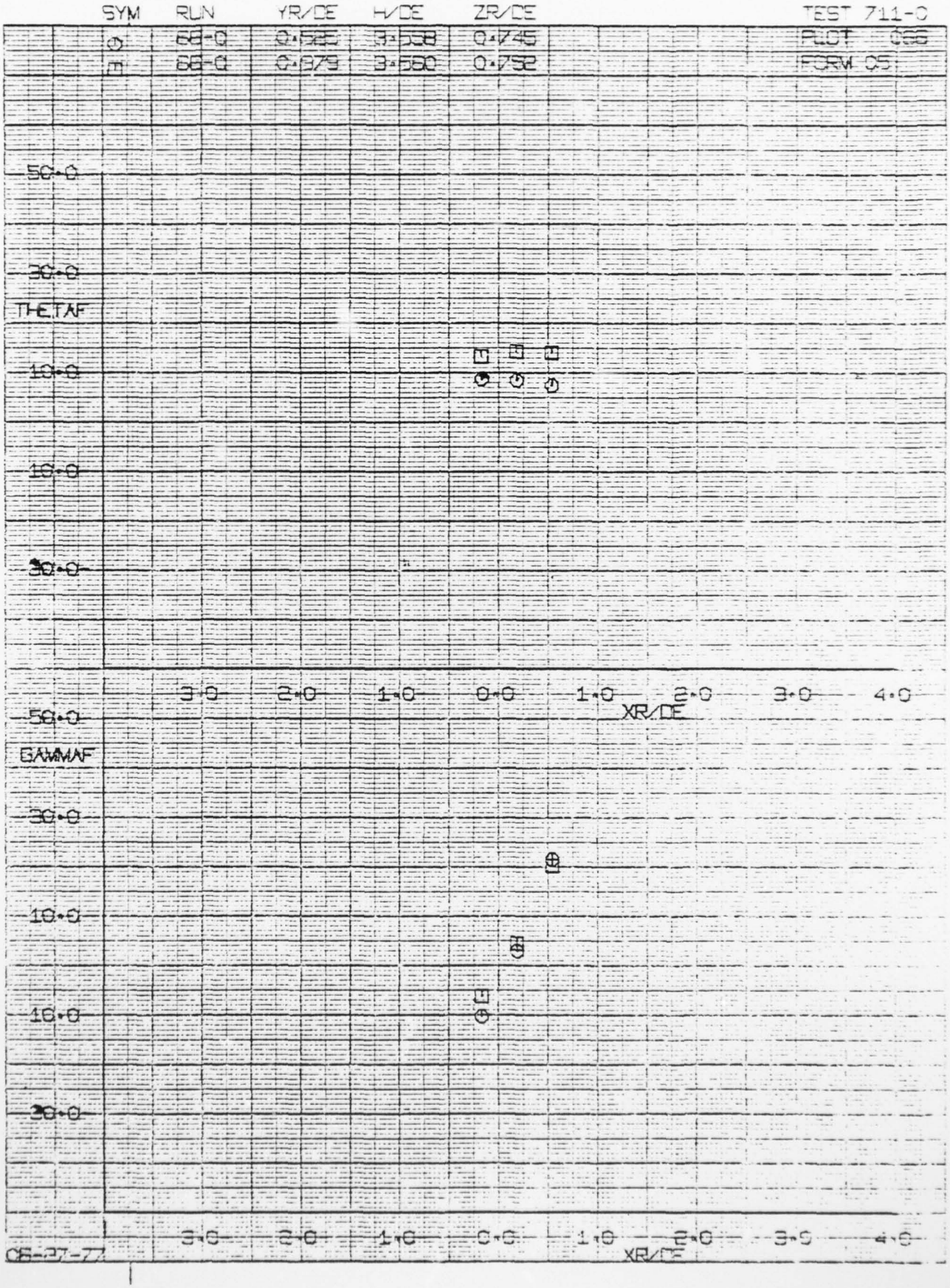
06-27-77

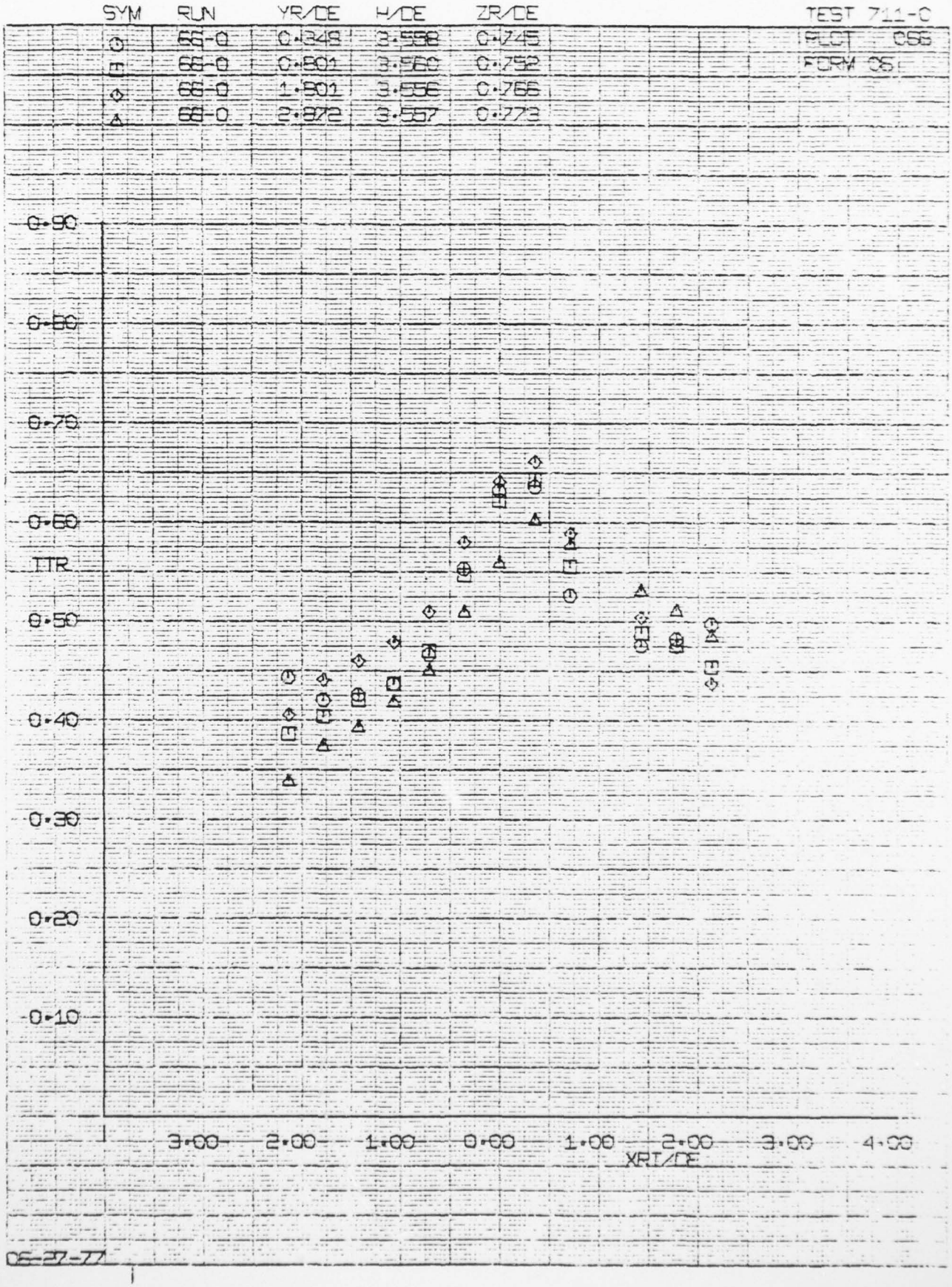

SYM RUN YR/DE H/DE ZR/DE
65-0 1.014 2.525 1.333
65-0 0.014 2.524 1.319
65-0 0.468 2.527 1.348
65-0 1.014 2.519 1.333
65-0 1.893 2.518 1.333
65-0 3.035 2.522 1.348
TEST 711-0
PLOT 065
FORM 04
1.0
MASF
0.8
LB-SEC
FT3
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
1.0
Q
FV
0.8
PSI
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
YR/DE
07-25-77


SYM RUN YR/CE H/CE ZR/CE
65-0 1.014 2.525 1.330
65-0 0.014 2.524 1.319
65-0 0.468 2.527 1.048
65-0 1.014 2.519 1.333
65-0 1.988 2.518 1.333
TEST 711-0
PLOT C65
FORM C5
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/CE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/CE
C6-27-7


SYM RUN YR/DE H/DE ZR/DE
65-0 1.191 2.525 1.333
65-0 0.163 2.524 1.319
65-0 0.291 2.527 1.346
65-0 0.837 2.519 1.333
65-0 1.816 2.518 1.333
65-0 2.858 2.522 1.348
TEST 711-0
PLOT 065
FORM 05
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRI/DE
05-27-77


SYM RUN YR/DE H/DE ZR/DE
56-0 0.525 3.558 0.745
66-0 0.979 3.560 0.752
68-0 1.973 3.556 0.766
86-0 3.050 3.557 0.773
TEST 711-0
PLOT 066
FORM 04
1.0
MASF
0.8
LB_SEC
FT3
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
1.0
Q
FV
0.8
PSI
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
07-29-77

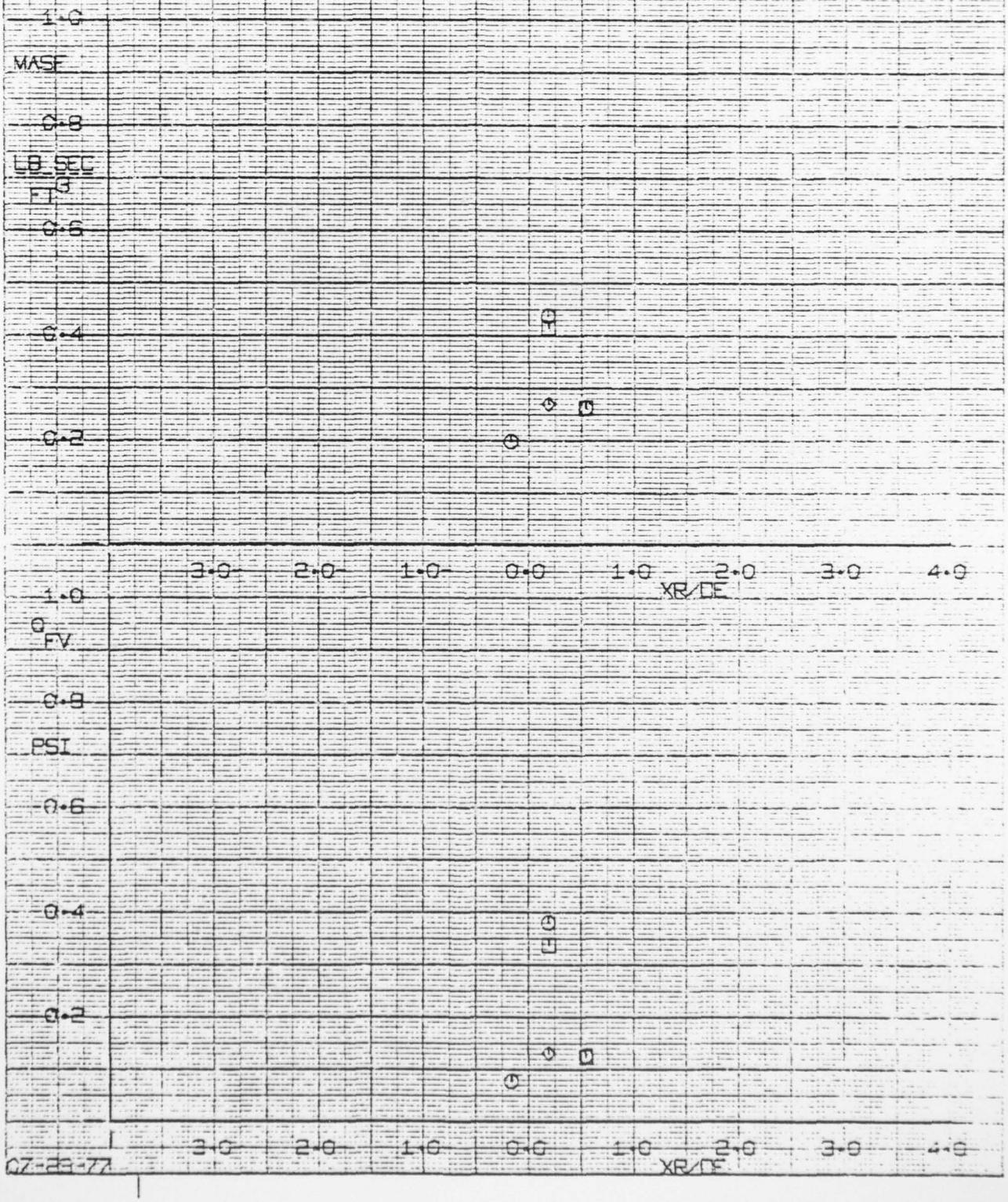

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 005
FORM 05
68-0 0.525 3.538 0.745
88-0 0.879 3.550 0.732
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
16.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-27-77

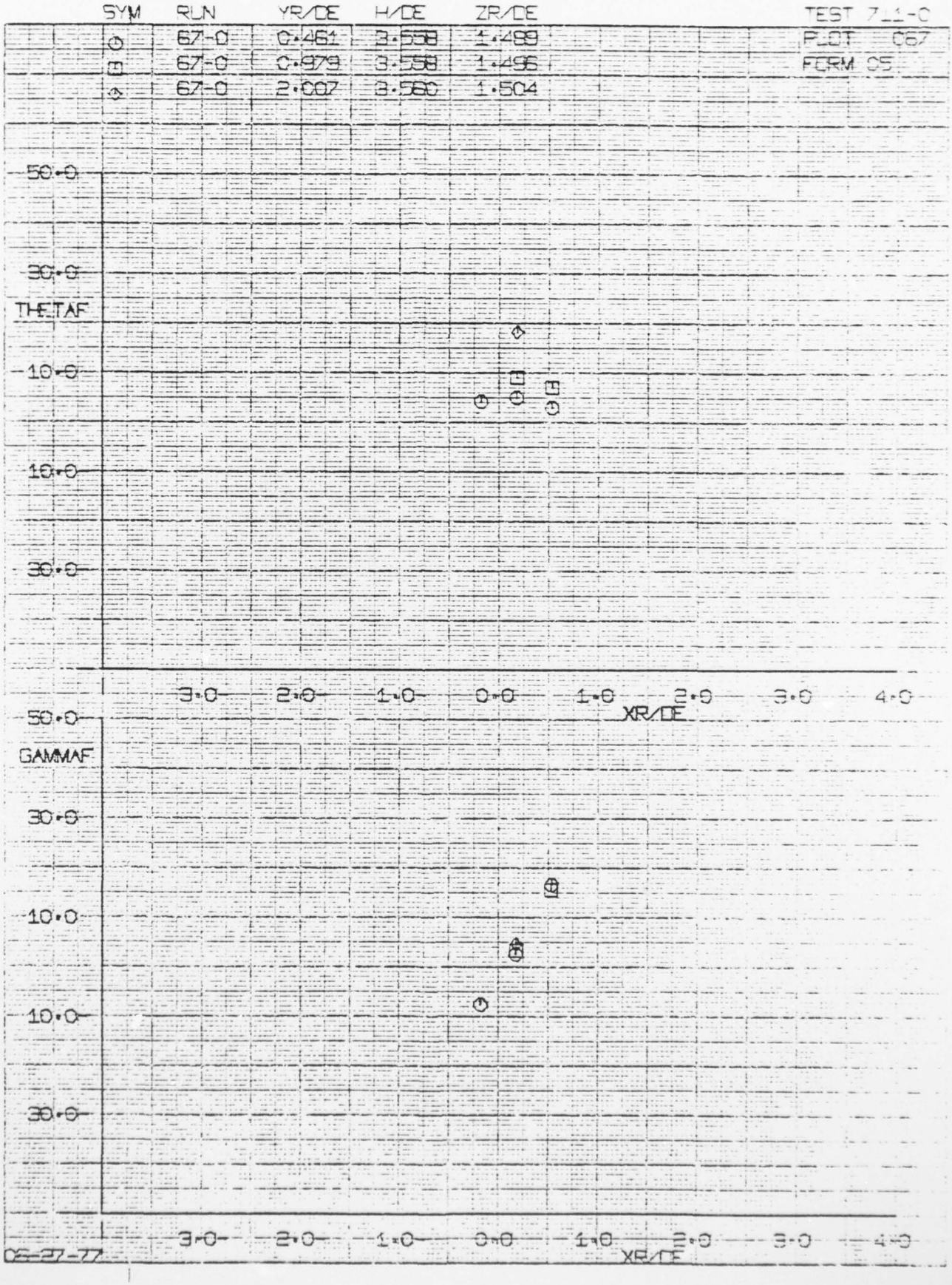

SYM RUN YR/DE H/DE ZR/DE
66-0 0.348 3.558 0.745
66-0 0.801 3.560 0.752
66-0 1.801 3.556 0.765
66-0 2.872 3.557 0.773
TEST 711-C
PLOT 056
FORM 05
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
05-27-77

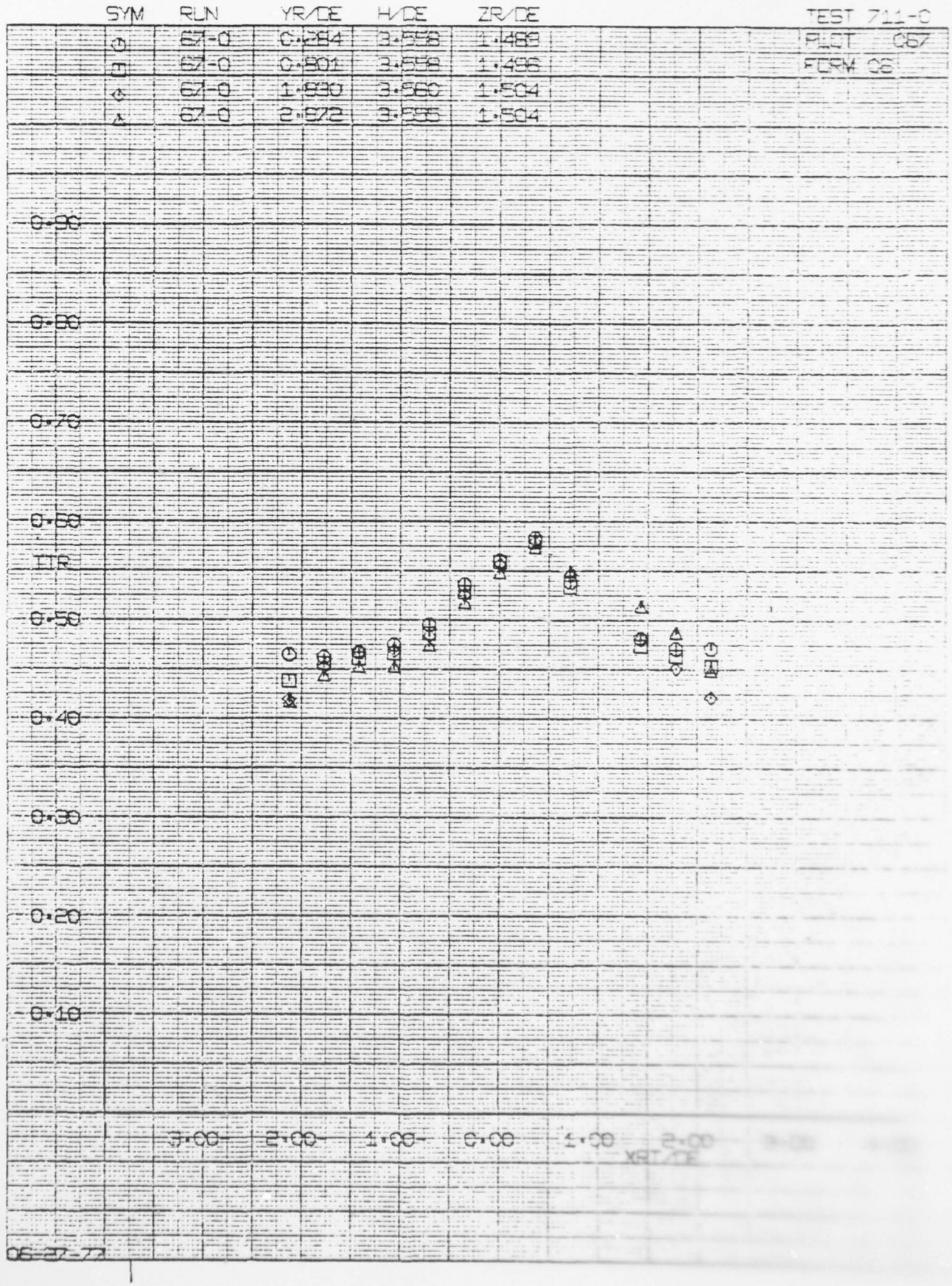
TEST 711-0

SYM	RUN	YR/DE	H/DE	ZR/DE
◇	67-0	0.461	3.556	1.488
□	67-0	0.979	3.538	1.496
◇	67-0	2.007	3.560	1.504
△	67-0	3.050	3.555	1.504

PLOT 067
FORM 04

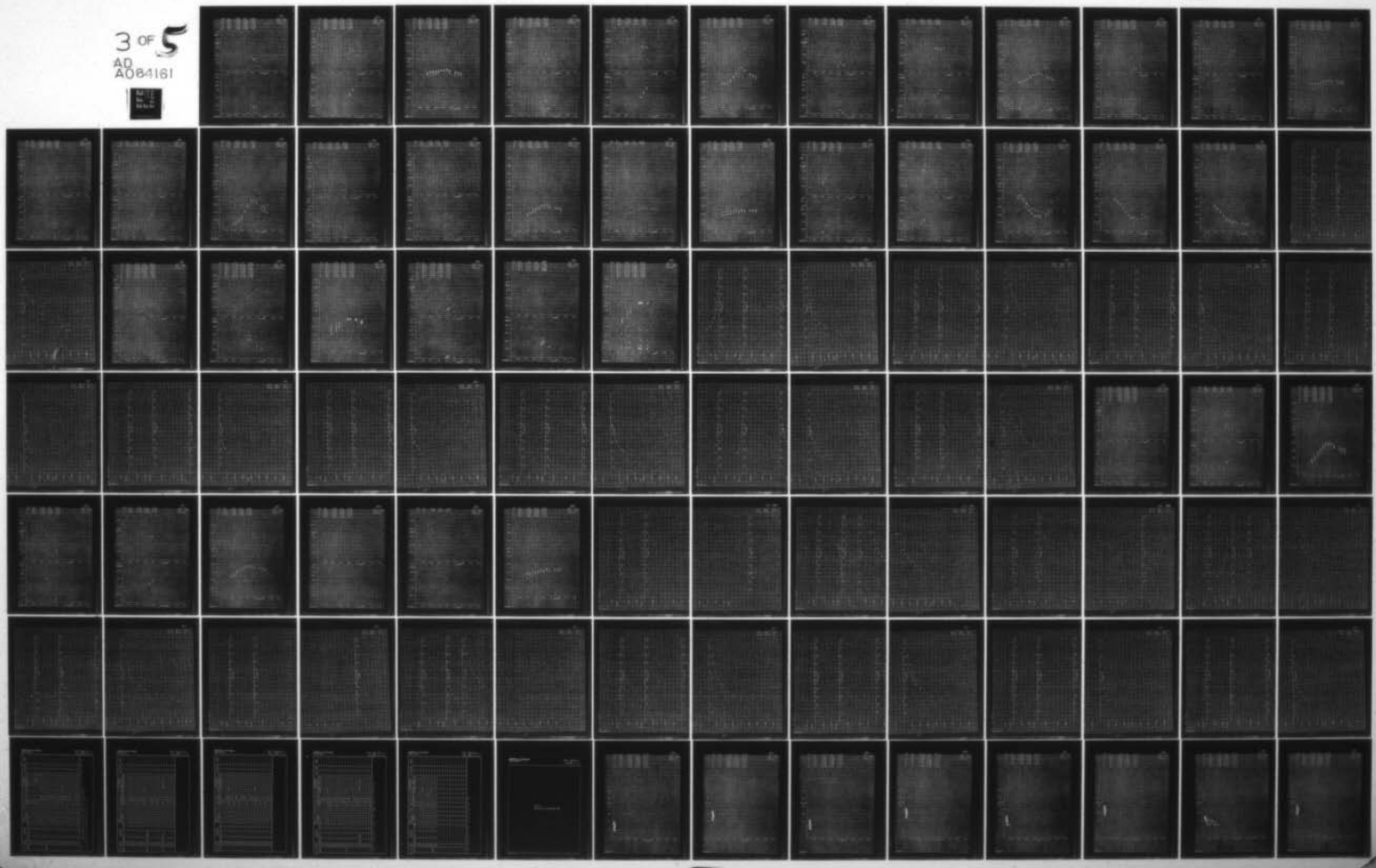


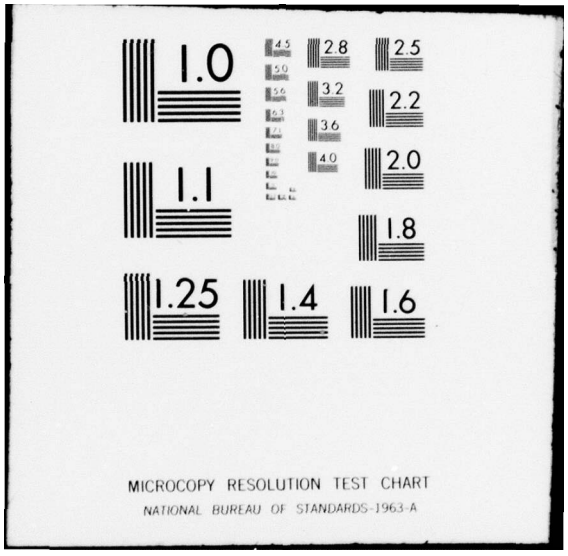

SYM RUN YR/DE H/DE ZR/DE
67-0 0.461 3.558 1.499
67-0 0.979 3.558 1.496
67-0 2.007 3.580 1.504
TEST 711-0
PLOT 067
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77

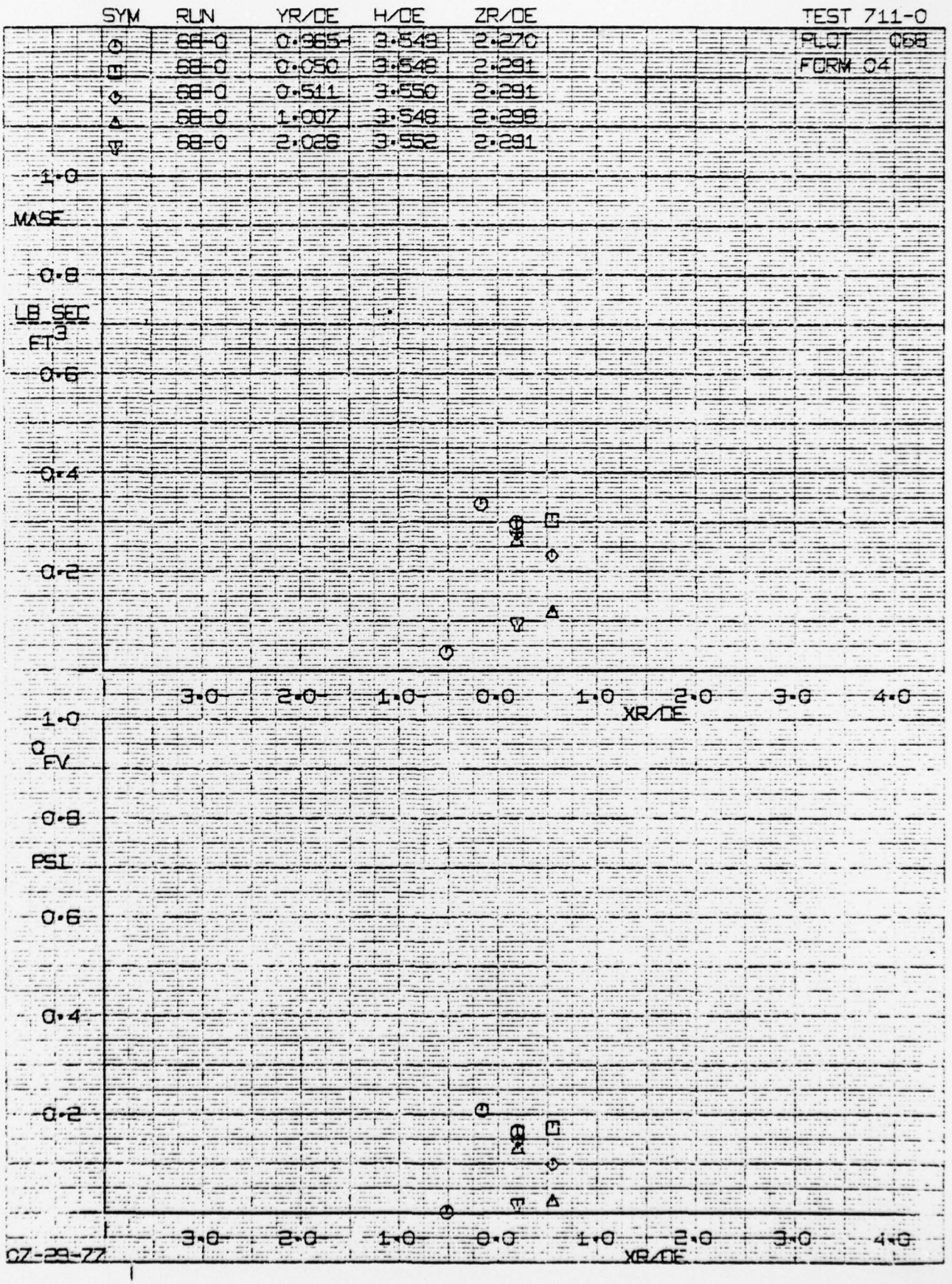

SYM RUN YR/DE H/DE ZR/DE
67-0 0.284 3.558 1.488
67-0 0.801 3.558 1.486
67-0 1.830 3.560 1.504
67-0 2.872 3.555 1.504
TEST 711-0
PLOT 067
FORM 06
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
XBT/DE
06-27-72

AD-A064 161 GENERAL DYNAMICS SAN DIEGO CA CONVAIR DIV F/G 1/3
LOW SPEED WIND TUNNEL TESTS TO EVALUATE THE AERODYNAMIC AND THE--ETC(U)
AUG 77 M B EILERT N00014-76-C-0698
UNCLASSIFIED CASD-GDLST-711 NL

3 OF 5
AD A064161



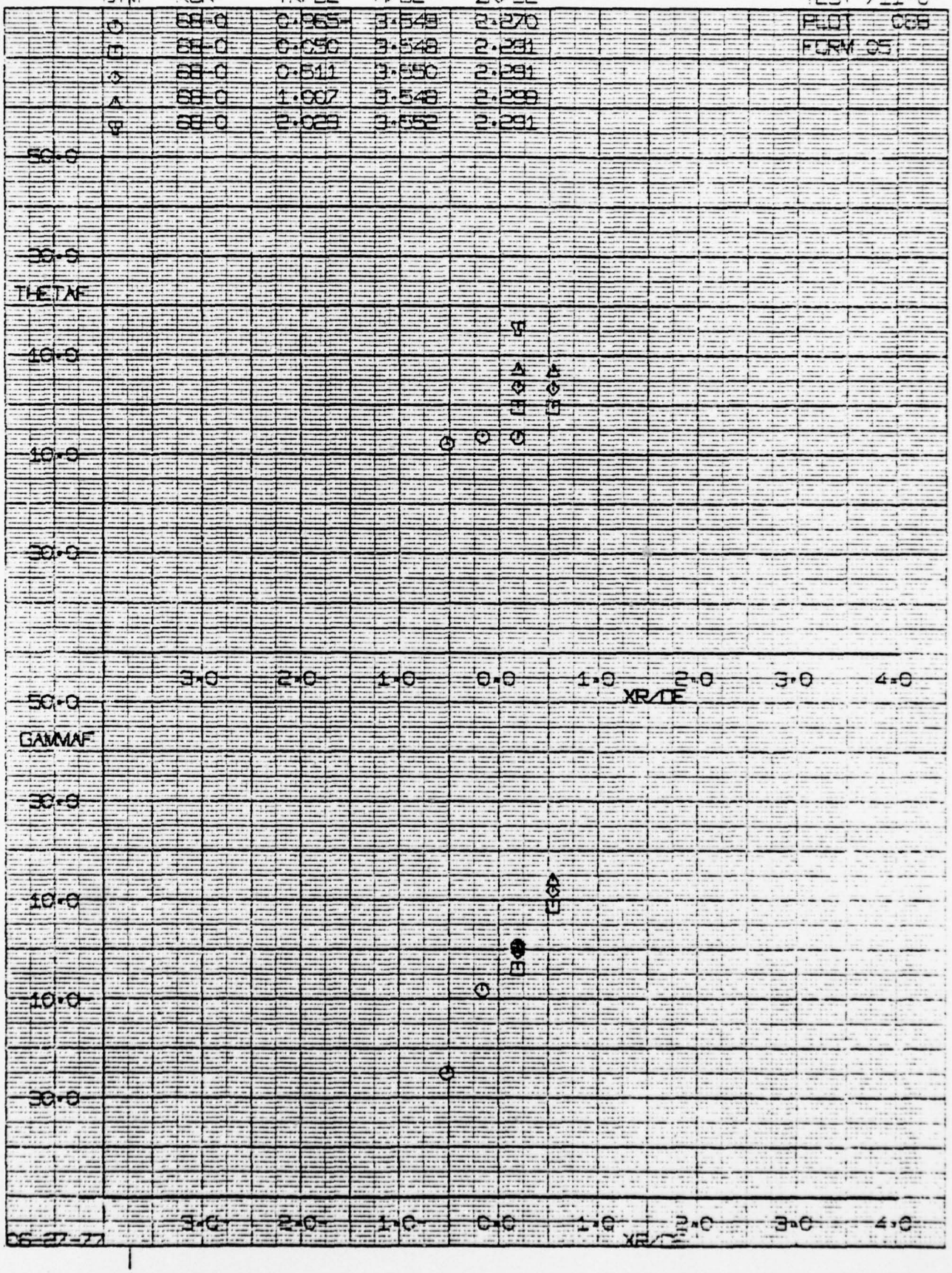

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
6.3
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A


SYM RUN YR/DE H/DE ZR/DE
68-0 0.965 3.543 2.270
68-0 0.050 3.548 2.291
68-0 0.511 3.550 2.291
68-0 1.007 3.548 2.298
68-0 2.026 3.552 2.291
TEST 711-0
PLOT 068
FORM 04
MASE
LB SEC
FT3
XR/DE
PSI
XB/DE
CZ-29-77

TEST 711-C

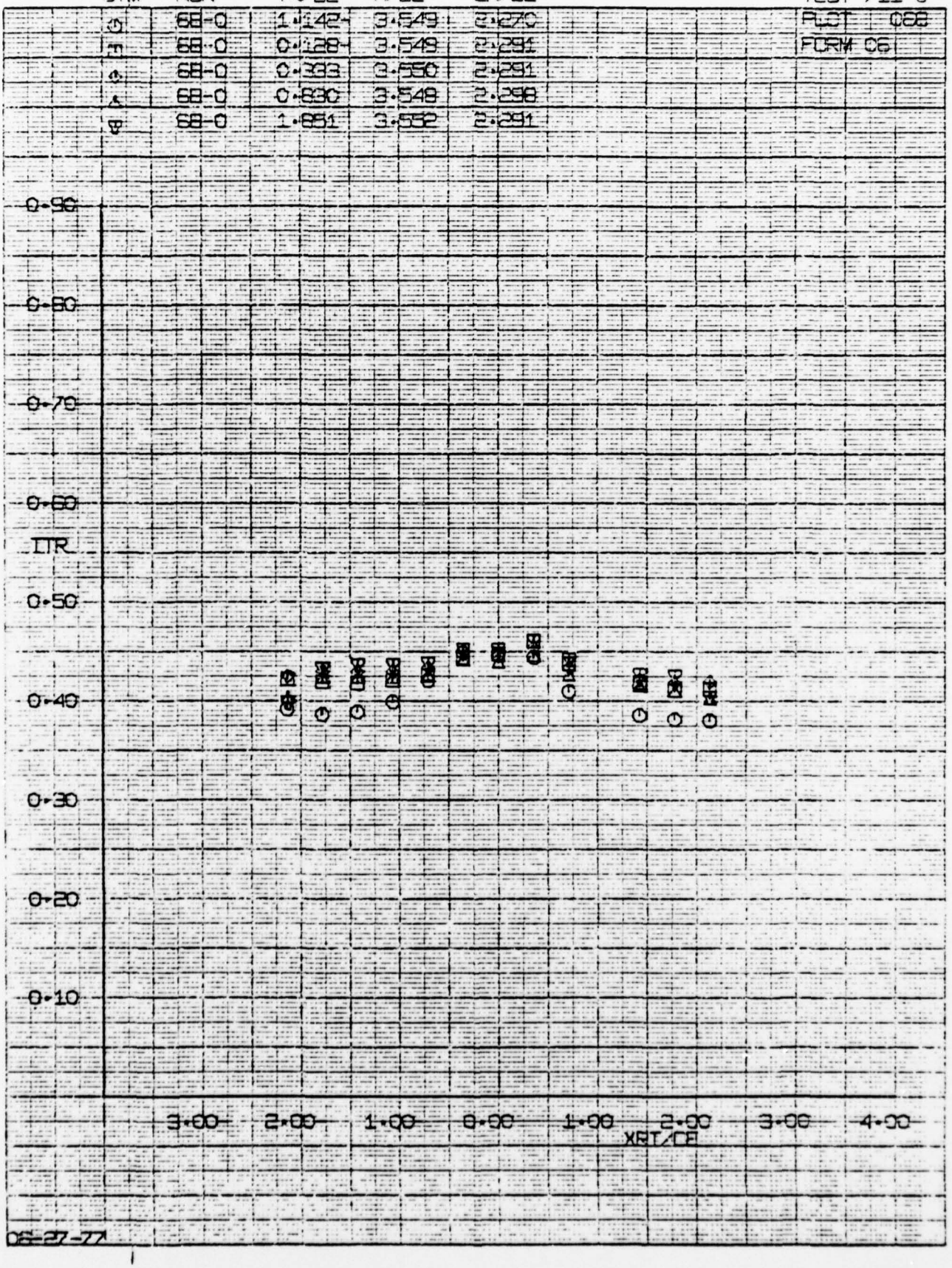
SYM	RUN	YR/CE	H/CE	ZR/CE
○	68-0	0.265	3.549	2.270
□	68-0	0.550	3.548	2.291
◇	68-0	0.511	3.550	2.291
△	68-0	1.007	3.548	2.298
▽	68-0	2.029	3.552	2.291

PILOT C05
FORM 05



SYM	RUN	YR/DE	H/DE	ZR/DE
○	68-0	1.142	3.549	2.270
□	68-0	0.128	3.549	2.291
◇	68-0	0.333	3.550	2.291
△	68-0	0.830	3.548	2.298
▽	68-0	1.851	3.552	2.291

TEST 711-0
PLOT 068
FORM 06

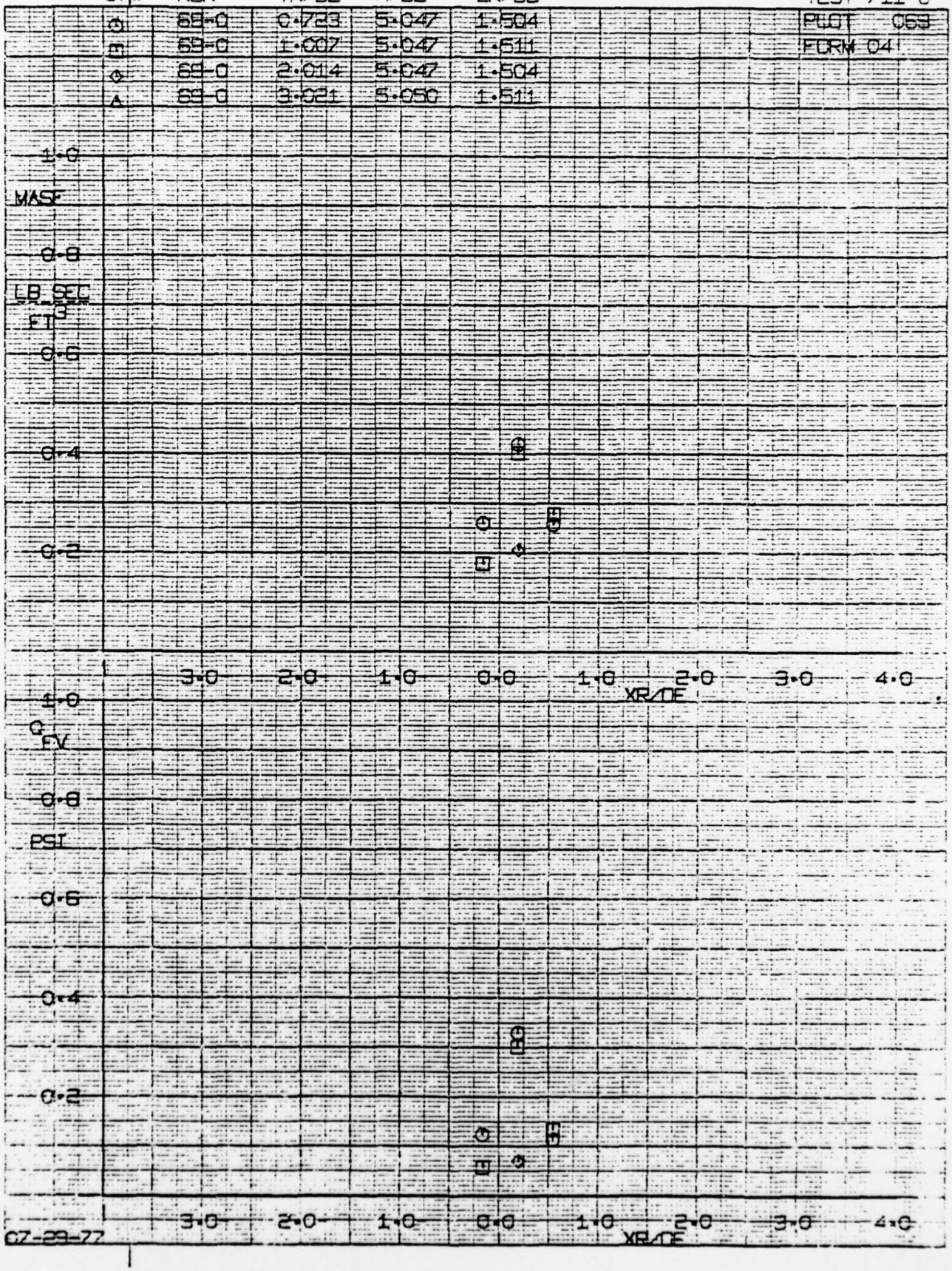


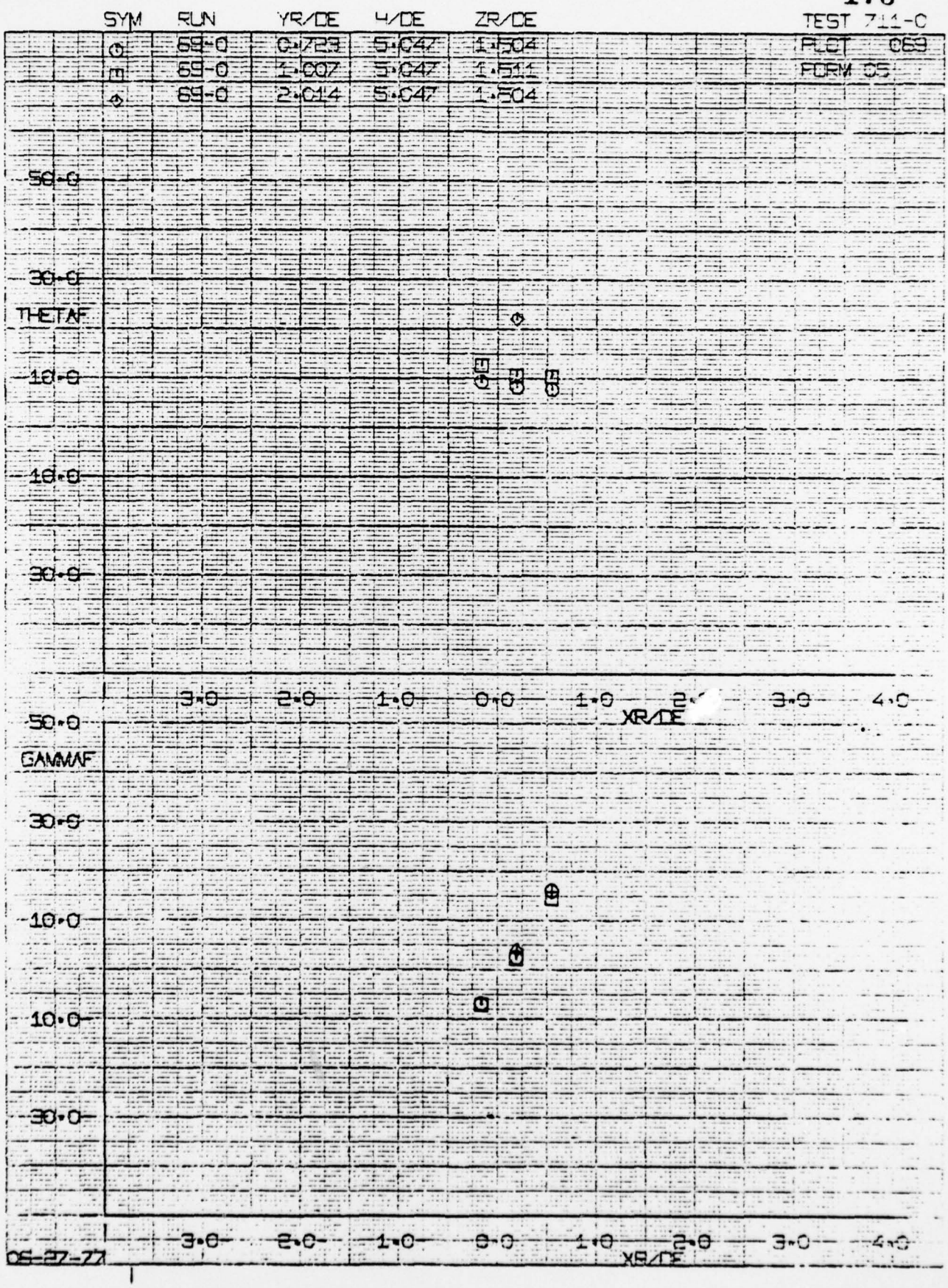
TEST 711-0

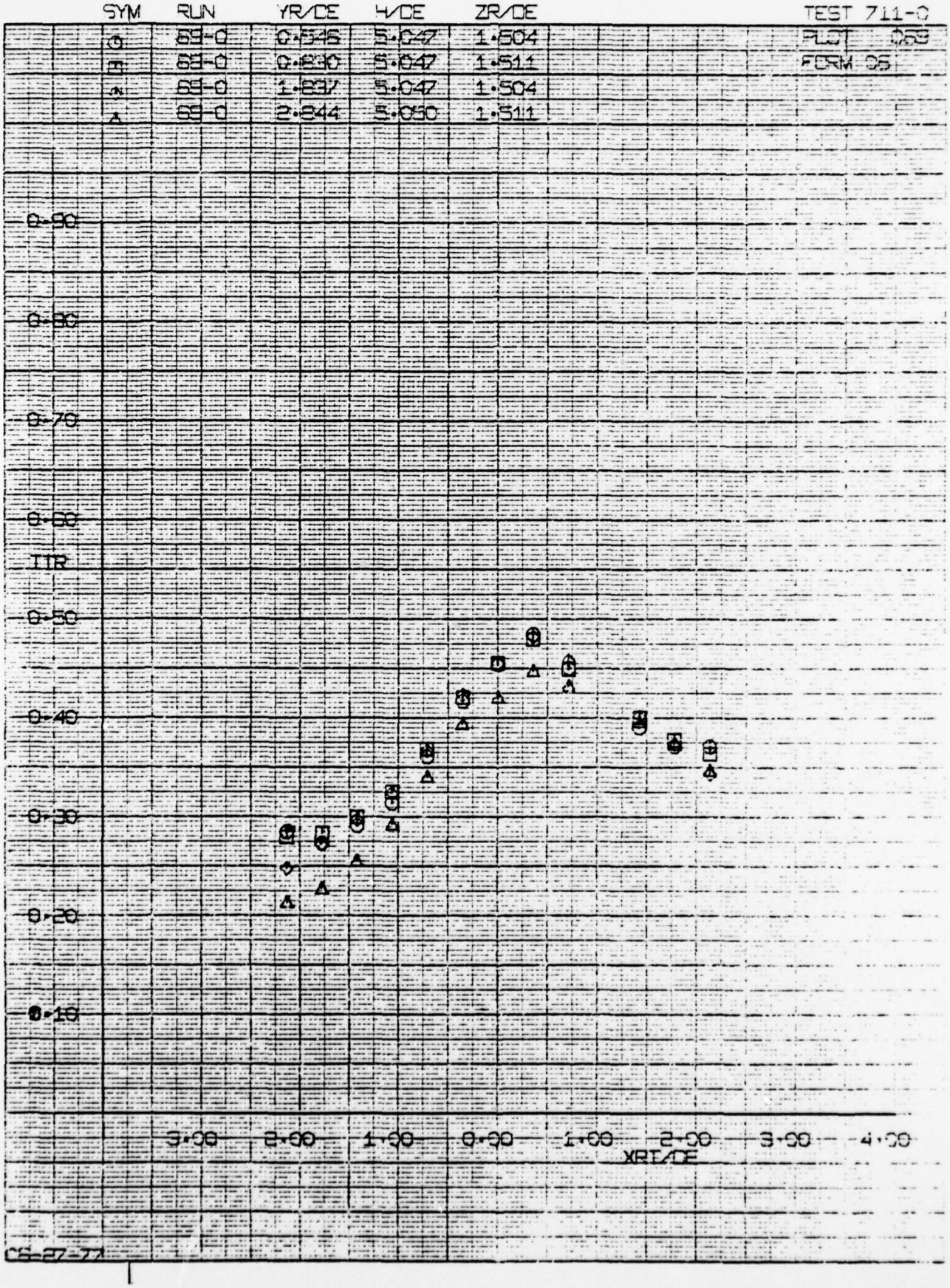
PLOT 063

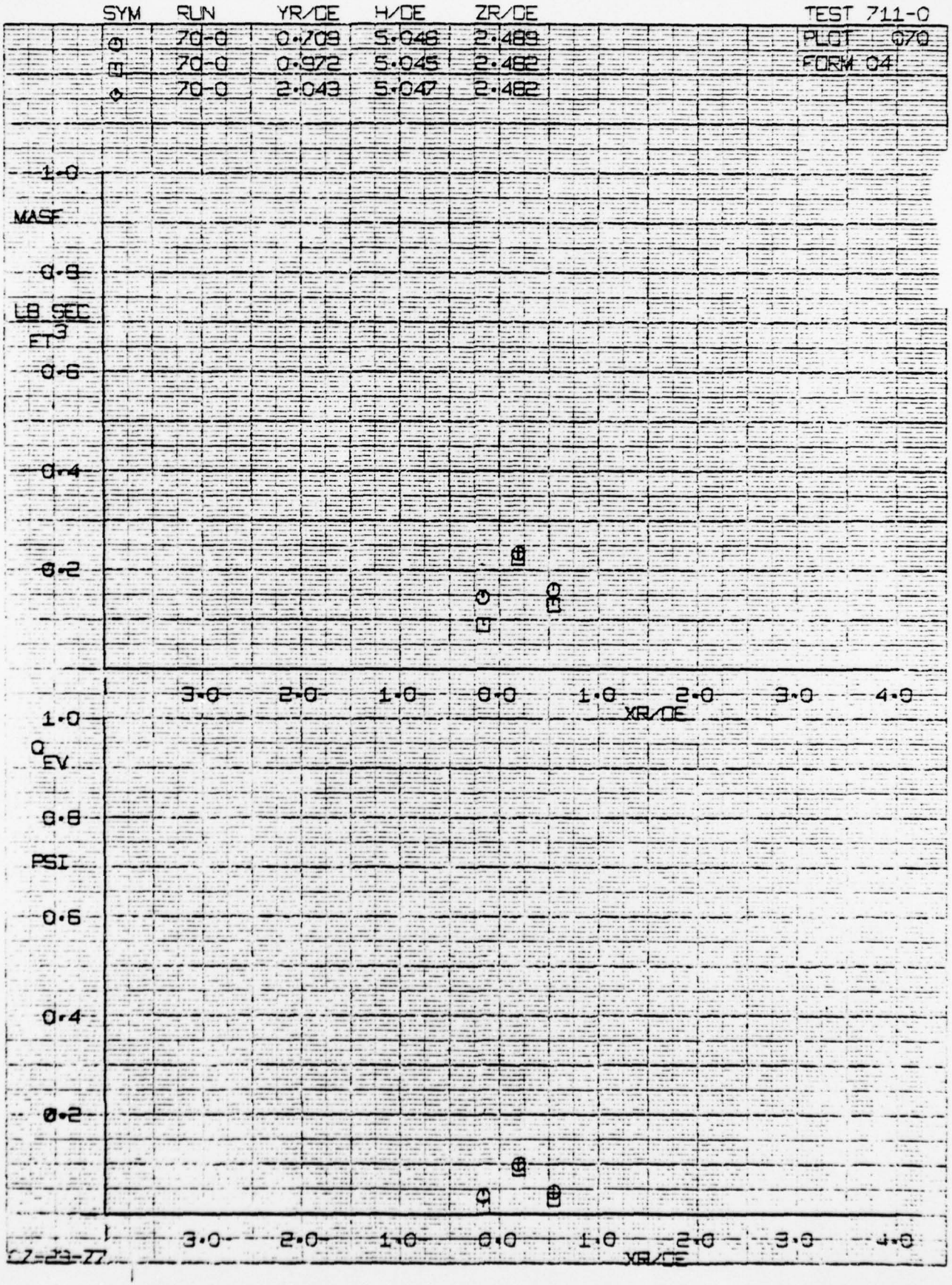
FORM 04

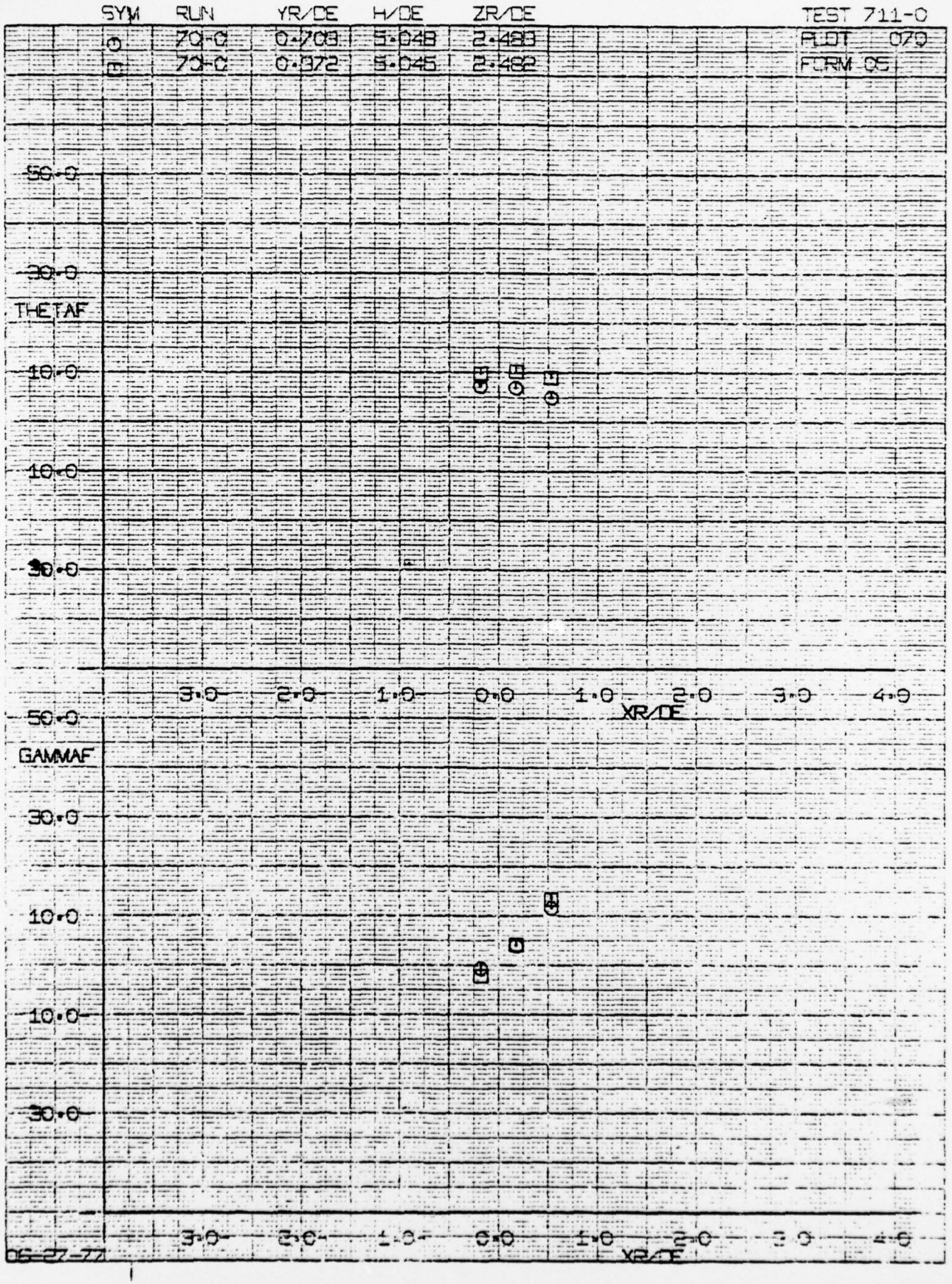
SYM	RUN	YR/DE	H/DE	ZR/DE
⊙	68-0	0.723	5.047	1.504
⊡	69-0	1.007	5.047	1.511
◇	69-0	2.014	5.047	1.504
△	69-0	3.021	5.050	1.511

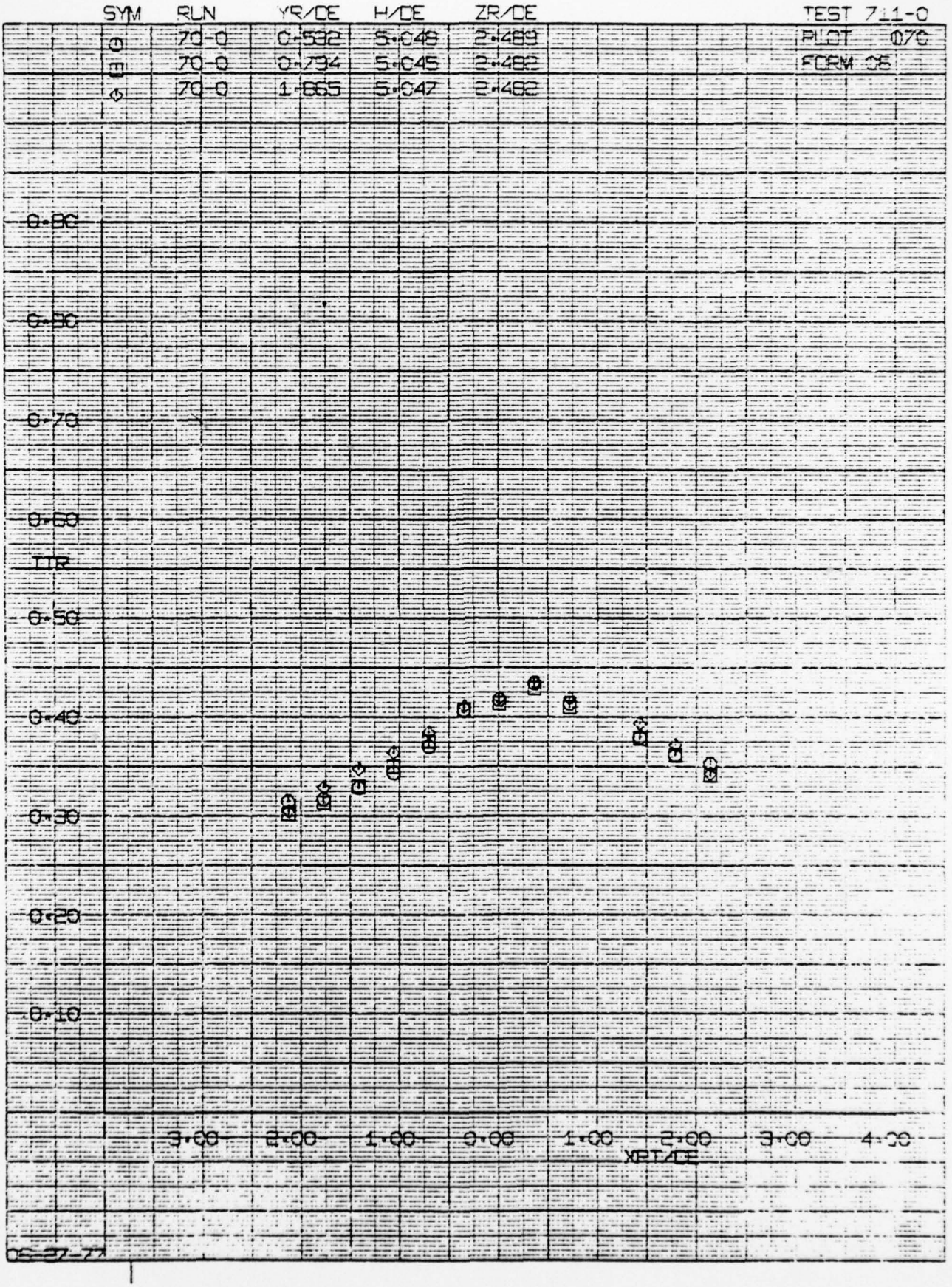


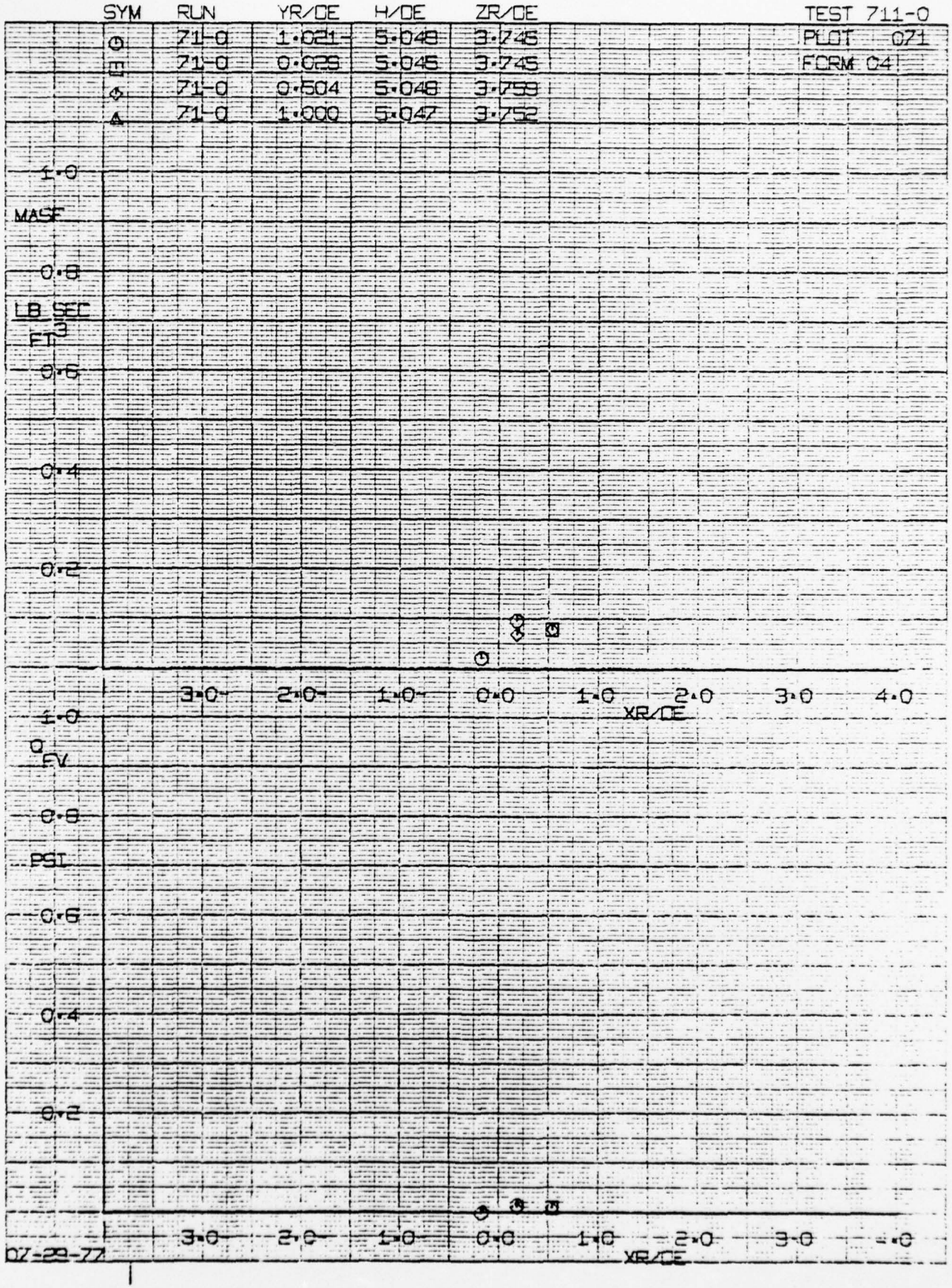

SYM RUN YR/DE Y/DE ZR/DE
69-0 0.723 5.047 1.504
69-0 1.007 5.047 1.511
69-0 2.014 5.047 1.504
TEST 711-C
PLOT 069
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-27-77

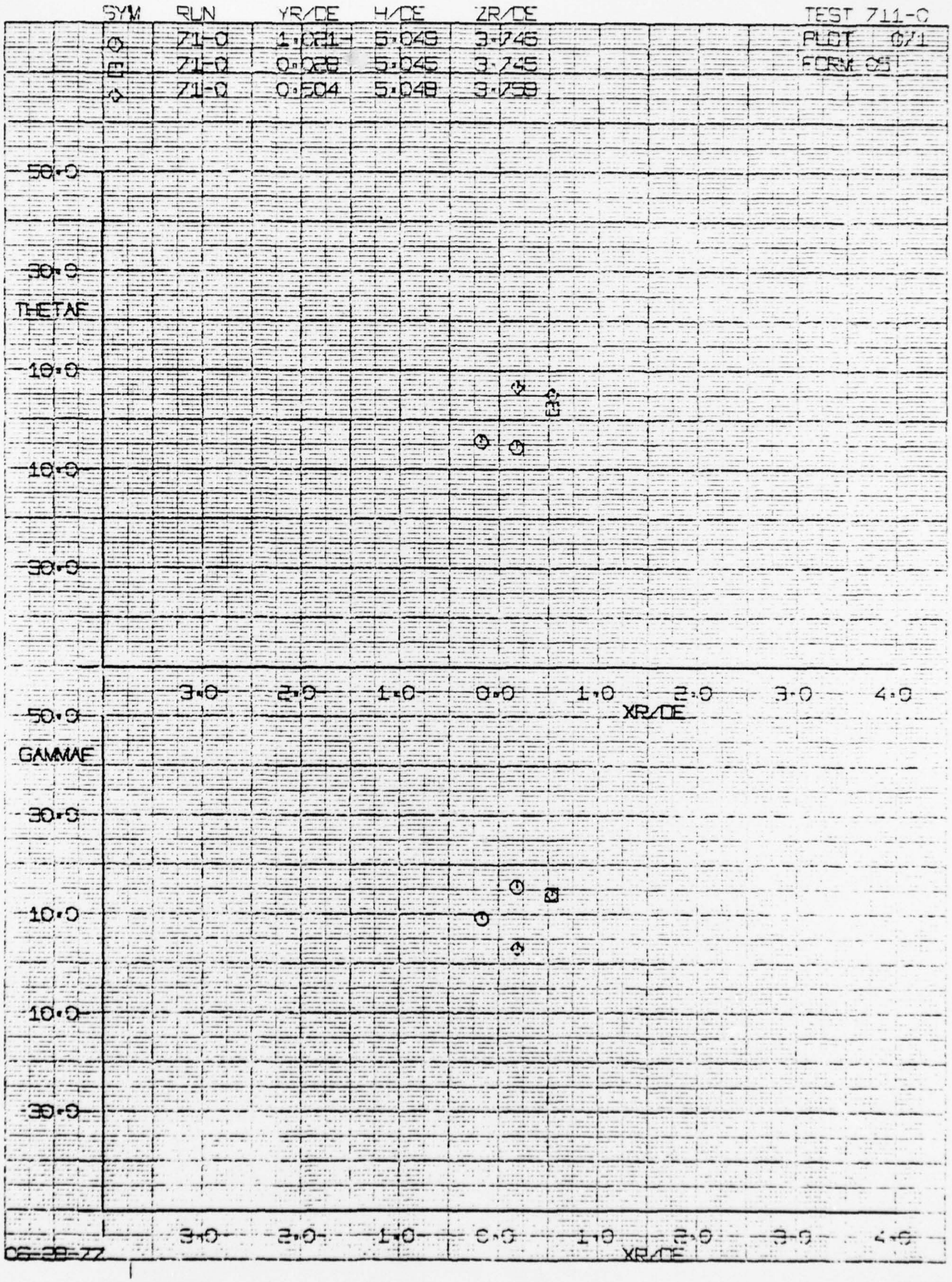

SYM RUN YR/DE H/DE ZR/DE
○ 69-0 0.545 5.047 1.504
□ 69-0 0.830 5.047 1.511
◇ 69-0 1.837 5.047 1.504
△ 69-0 2.344 5.050 1.511
TEST 711-0
PLOT 059
FORM 05
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
CS-27-77

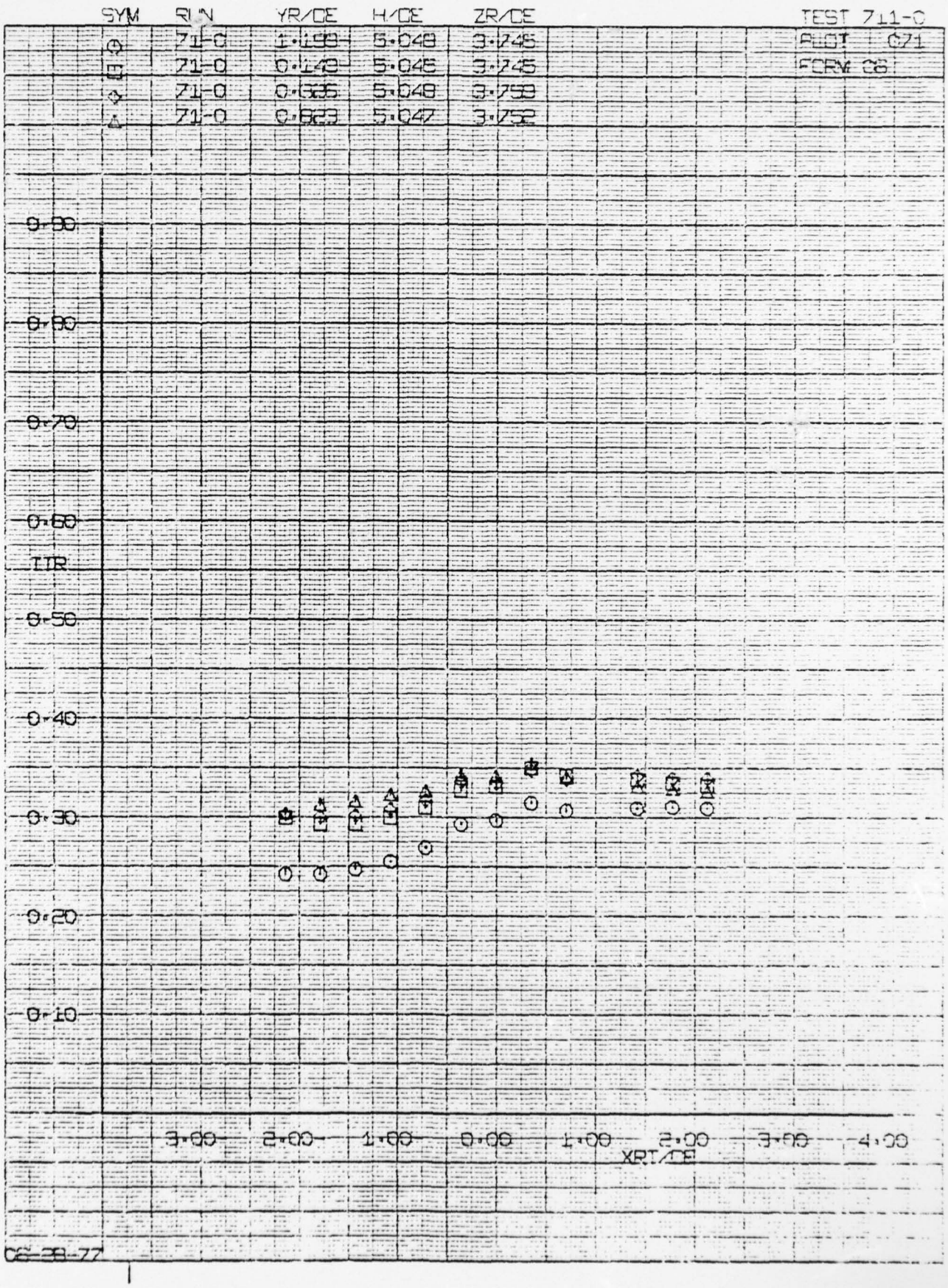

SYM RUN YR/DE H/DE ZR/DE
70-0 0.709 5.046 2.489
70-0 0.972 5.045 2.482
70-0 2.043 5.047 2.482
TEST 711-0
PLOT 070
FORM 04
MASS
LB SEC
FT3
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
Q
EV
PSI
1.0
0.8
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
07-23-77


SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 079
FORM 05
70-0 0.703 5.048 2.483
70-0 0.372 5.045 2.482
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-27-77


SYM
RUN
YR/CE
H/CE
ZR/CE
TEST 711-0
PLOT 070
FORM 05
70-0 0.532 5.048 2.489
70-0 0.734 5.045 2.482
70-0 1.665 5.047 2.482
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XPT/CE
05-27-77

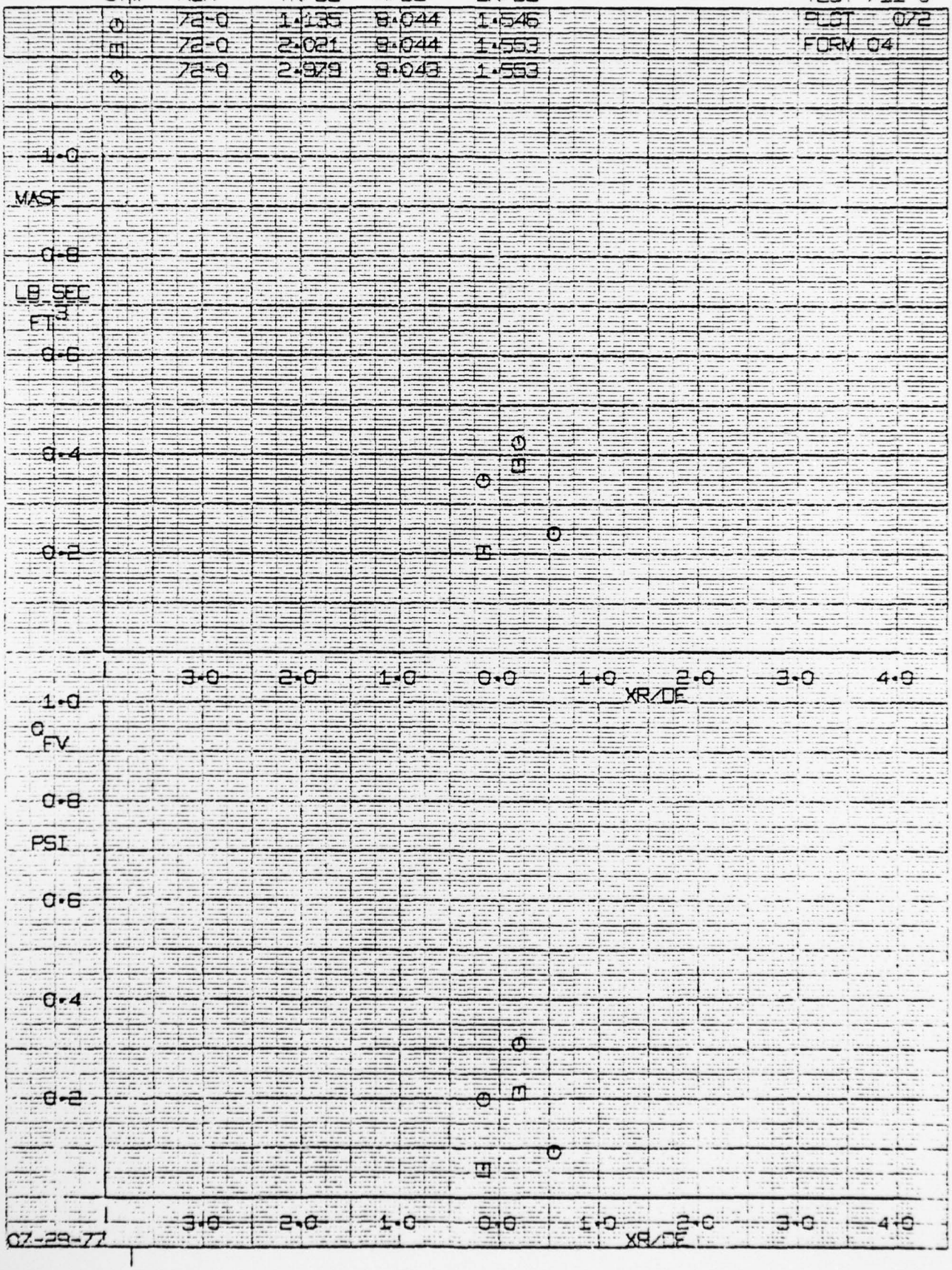

SYM RUN YR/DE H/DE ZR/DE
71-0 1.021 5.048 3.745
71-0 0.028 5.045 3.745
71-0 0.504 5.048 3.758
71-0 1.000 5.047 3.752
TEST 711-0
PLOT 071
FORM 04
MASS
LB SEC
FT3
XR/DE
PSI
XR/DE
07-29-77


SYM RUN YR/DE H/DE ZR/DE
71-0 1.021 5.049 3.746
71-0 0.028 5.045 3.745
71-0 0.504 5.048 3.758
TEST 711-0
PLOT 071
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-28-77

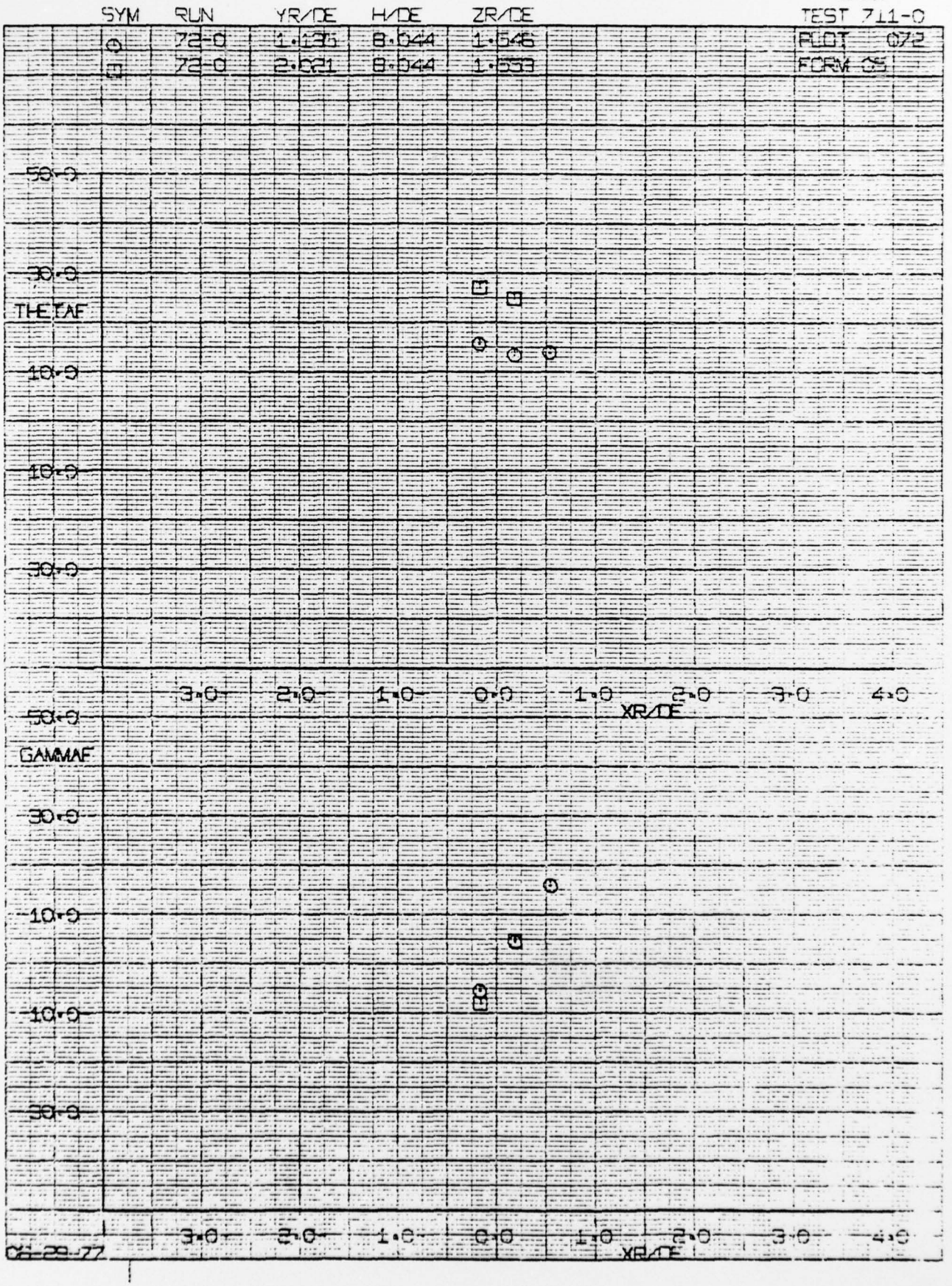

SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-0
PLOT 071
FORM 28
71-0 1.199 5.048 3.745
71-0 0.142 5.045 3.745
71-0 0.335 5.048 3.753
71-0 0.823 5.047 3.752
0.90
0.80
0.70
0.60
TIR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
DE-38-77

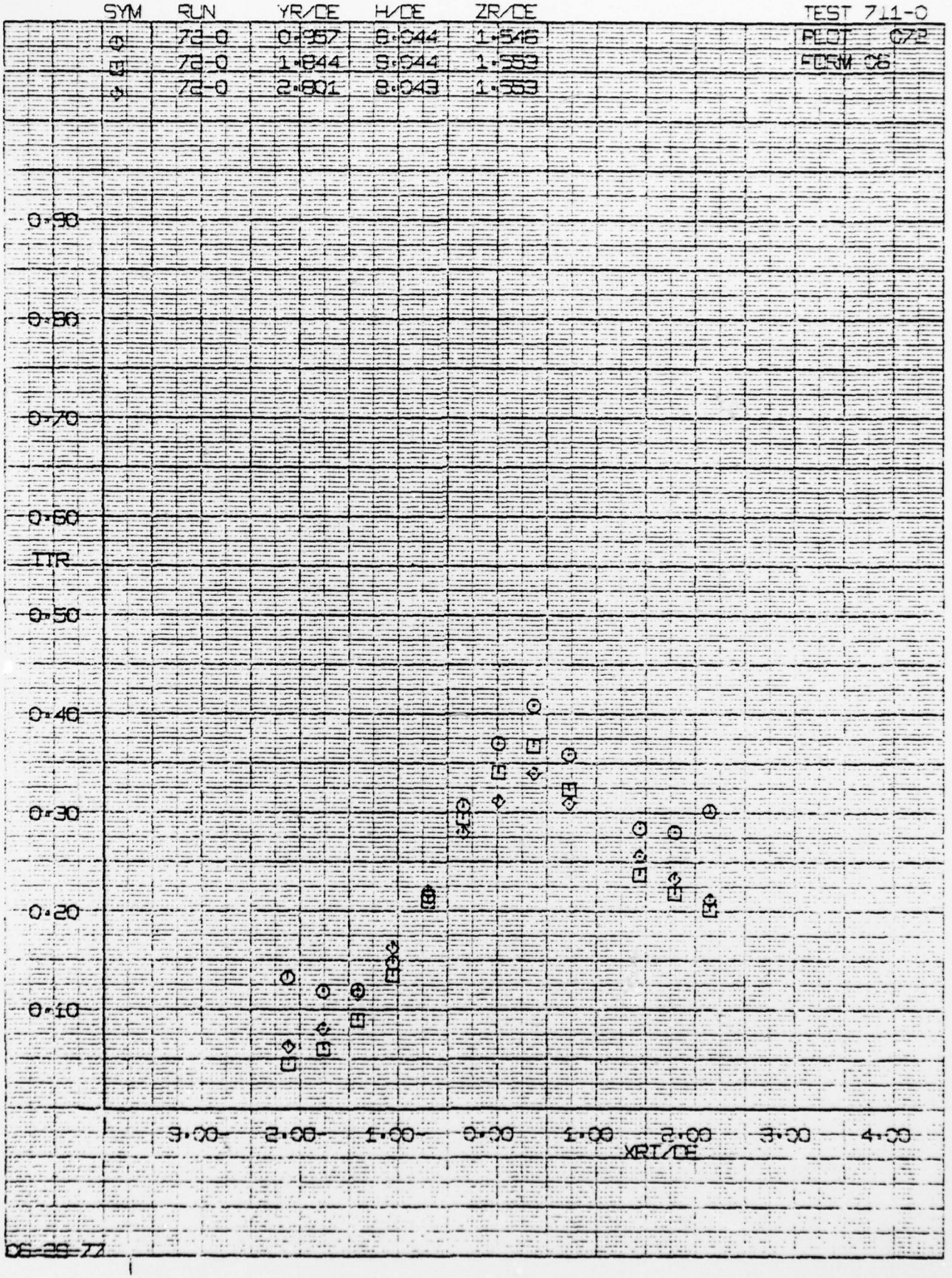
SYM	RUN	YR/DE	H/DE	ZR/DE
Φ	72-0	1.135	8.044	1.546
□	72-0	2.021	8.044	1.553
◇	72-0	2.979	8.043	1.553

TEST 711-0
PLOT 072
FORM 04



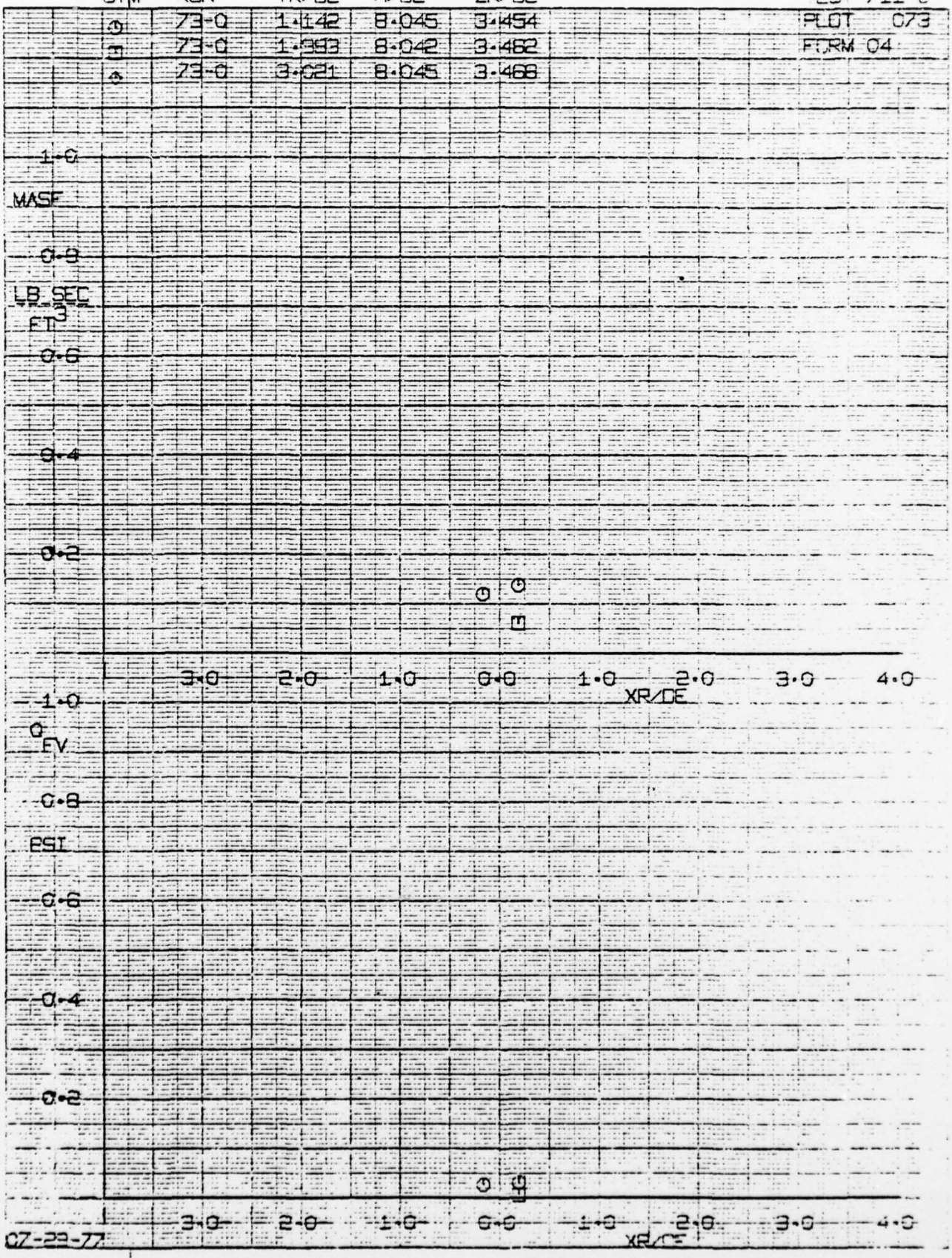
07-29-77


SYM RUN YR/DE H/DE ZR/DE
72-0 1.135 8.044 1.546
72-0 2.021 8.044 1.553
TEST 711-0
PLOT 072
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
01-29-77

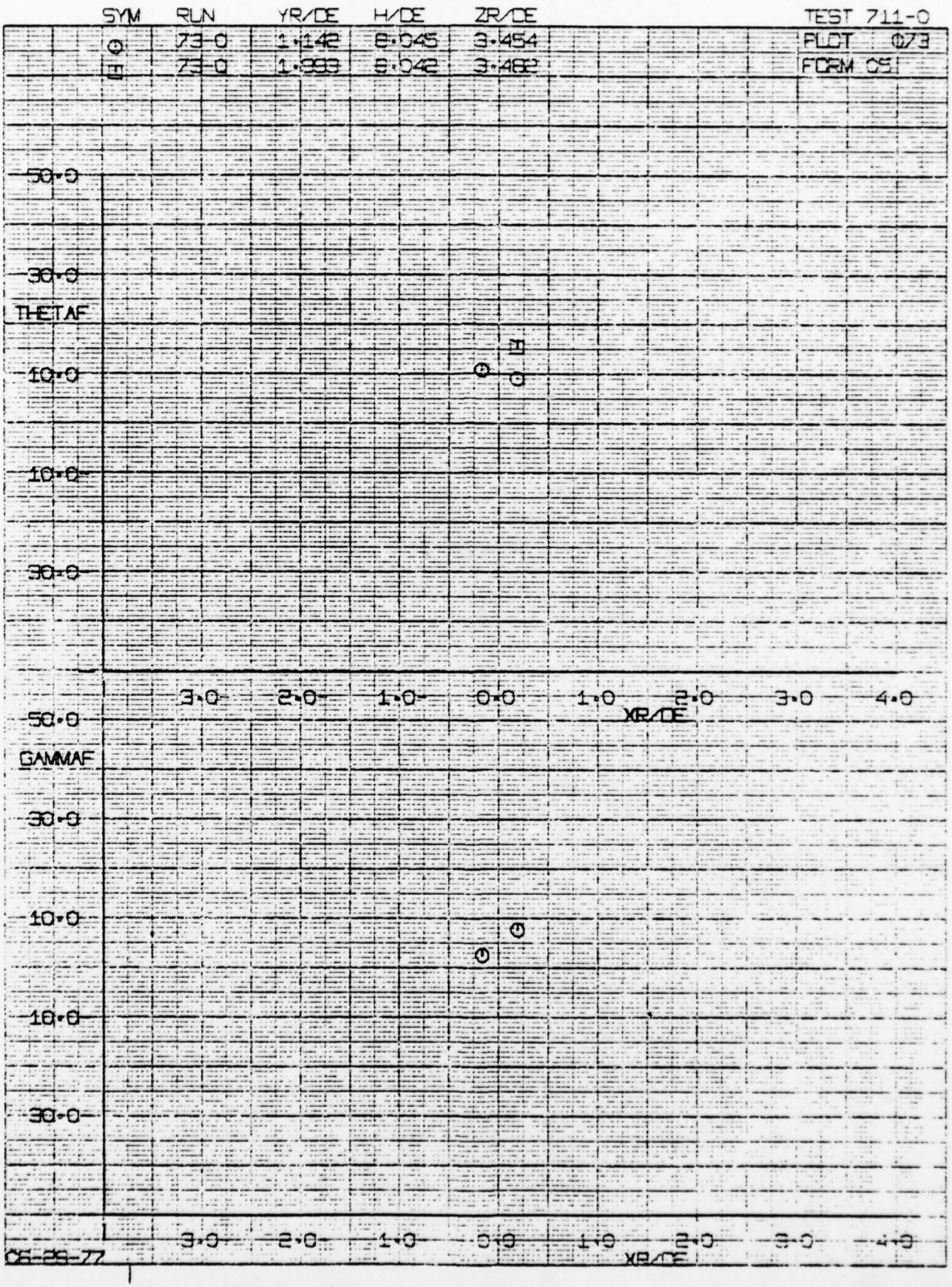

SYM RUN YR/DE H/DE ZR/DE
72-0 0.957 8.044 1.546
72-0 1.844 8.044 1.553
72-0 2.801 8.043 1.553
TEST 711-0
PLOT C72
FCSM 08
0.90
0.80
0.70
0.60
ITR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRI/DE
06-28-77

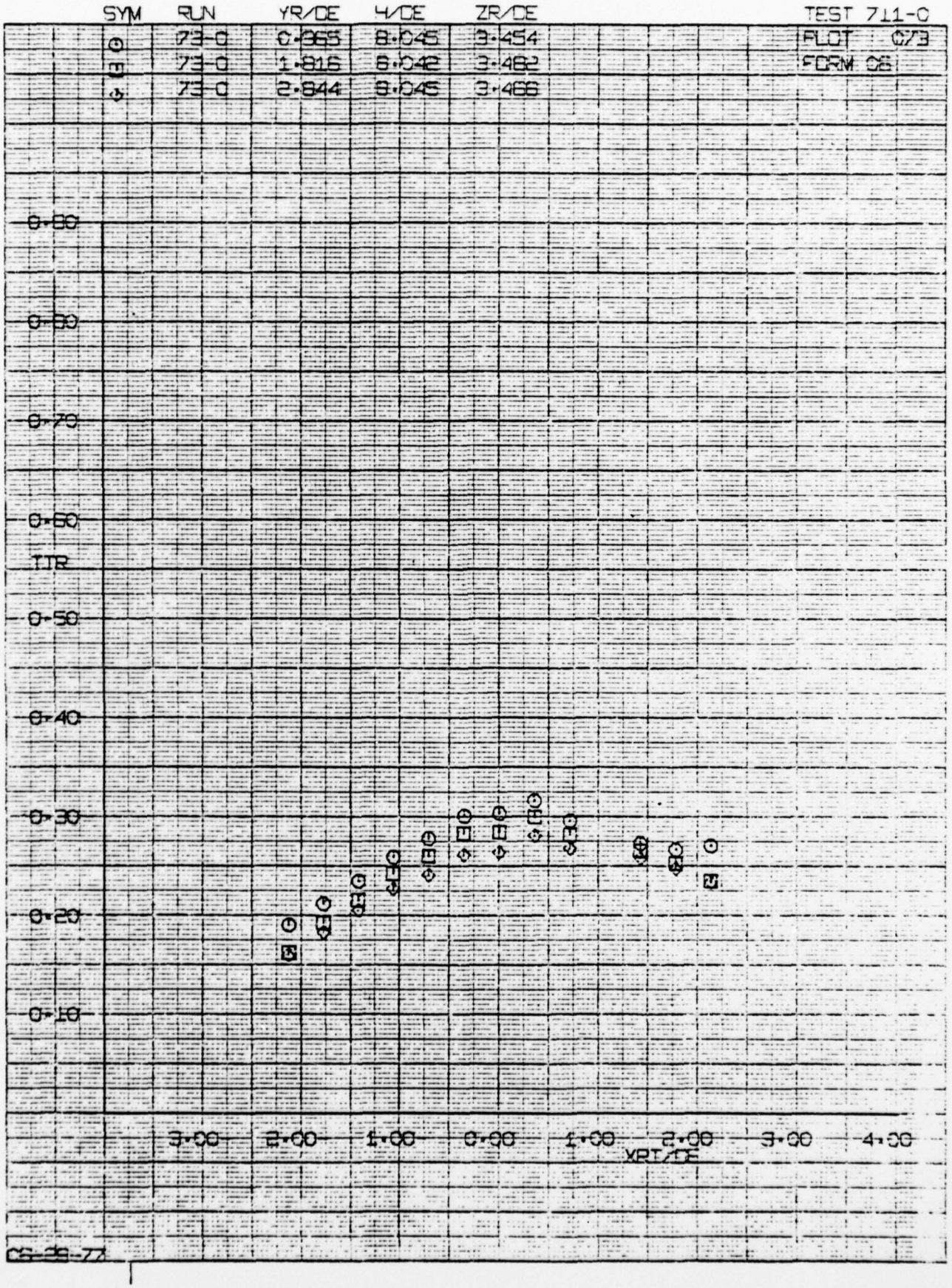
SYM	RUN	YR/DE	H/DE	ZR/DE
⊙	73-0	1.142	8.045	3.454
□	73-0	1.393	8.042	3.462
◇	73-0	3.021	8.045	3.468

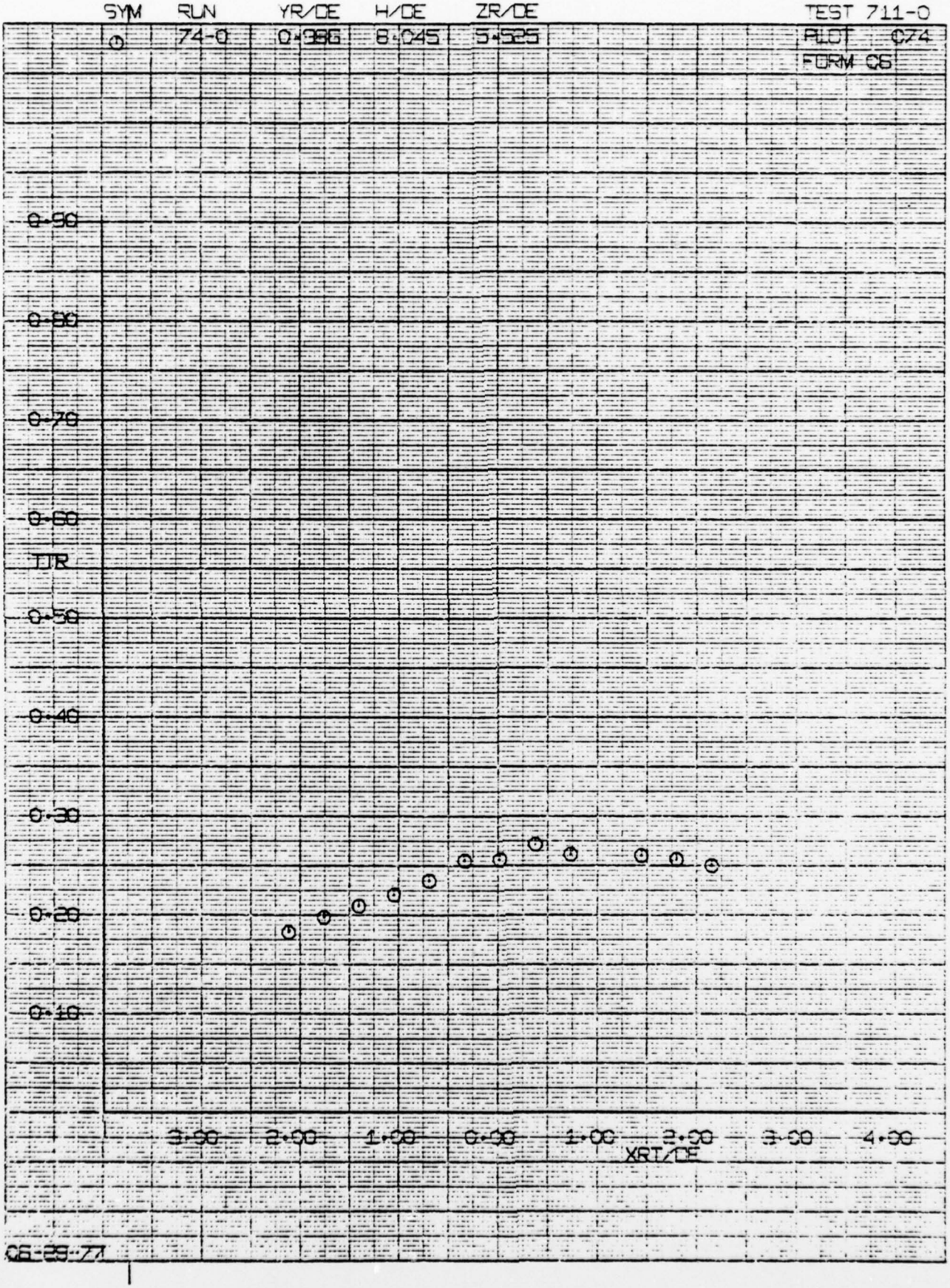
TEST 711-0
PLOT 073
FORM 04



07-23-77

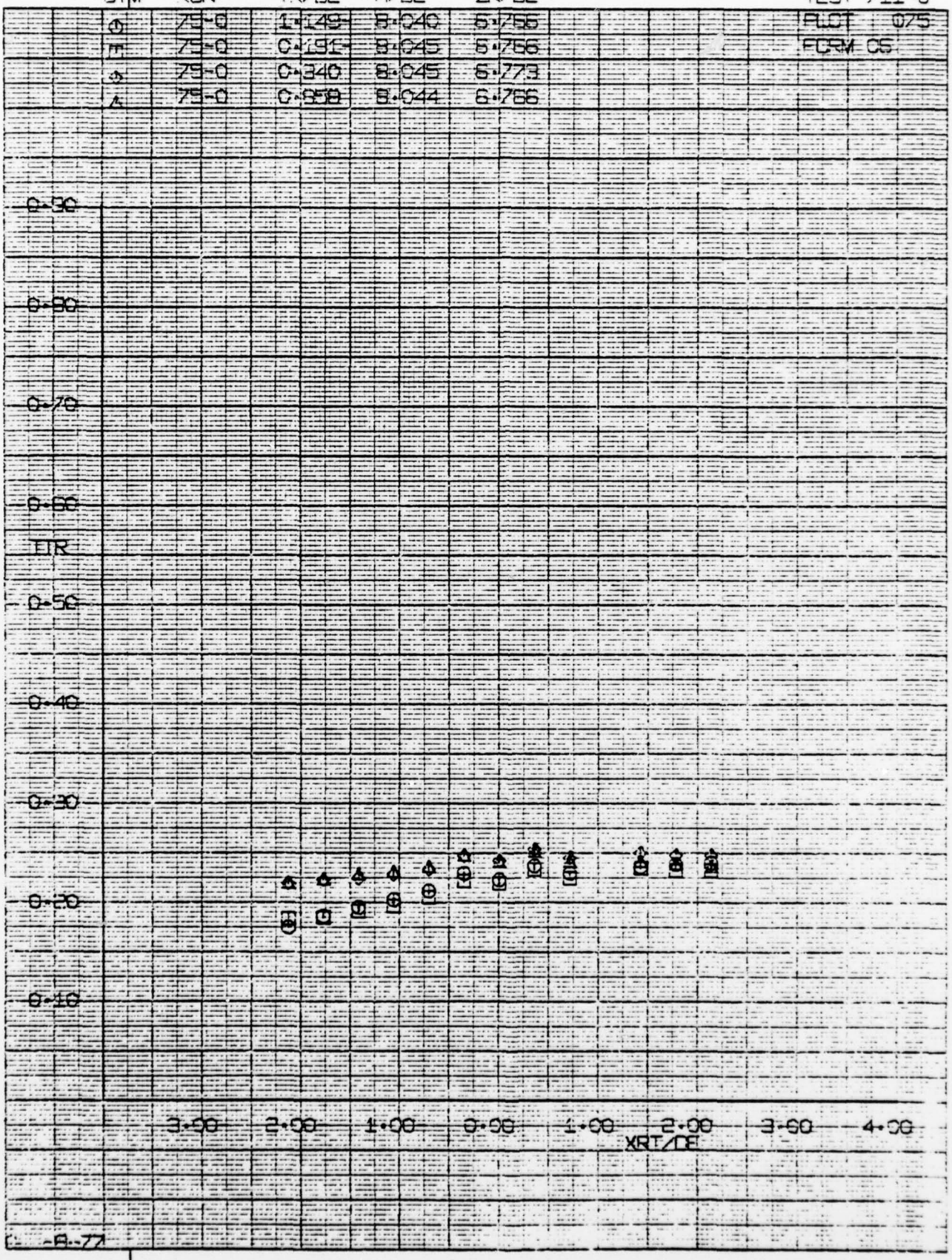

SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-0
73-0 1.142 8.045 3.454
FLGT 073
73-0 1.993 8.042 3.482
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-25-77

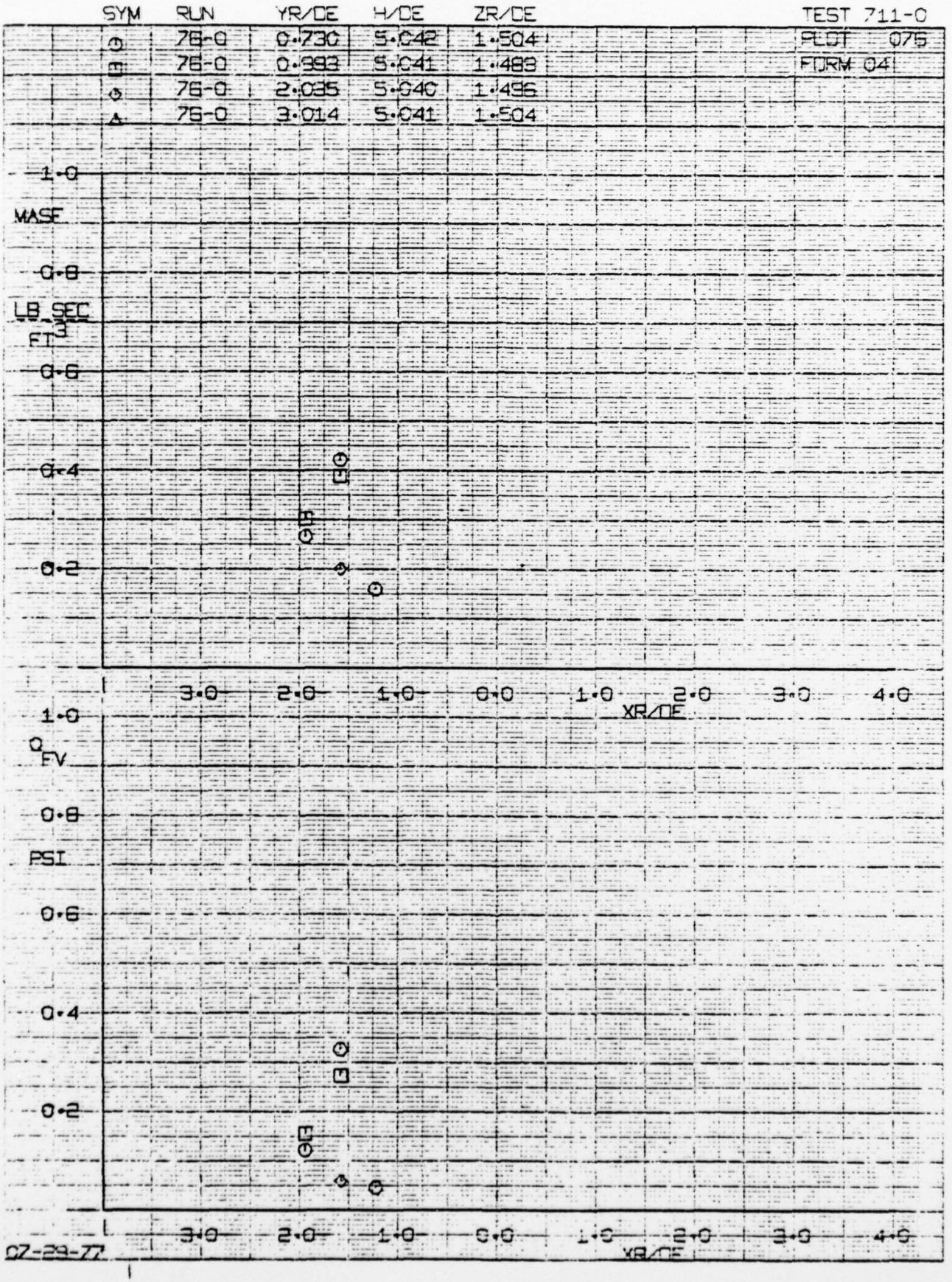

SYM RUN YR/DE 4/DE ZR/DE
73-0 0.865 8.045 3.454
73-0 1.816 8.042 3.482
73-0 2.844 8.045 3.466
TEST 711-0
PLOT 073
FORM 06
0.80
0.60
0.70
0.60
TIR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-29-77

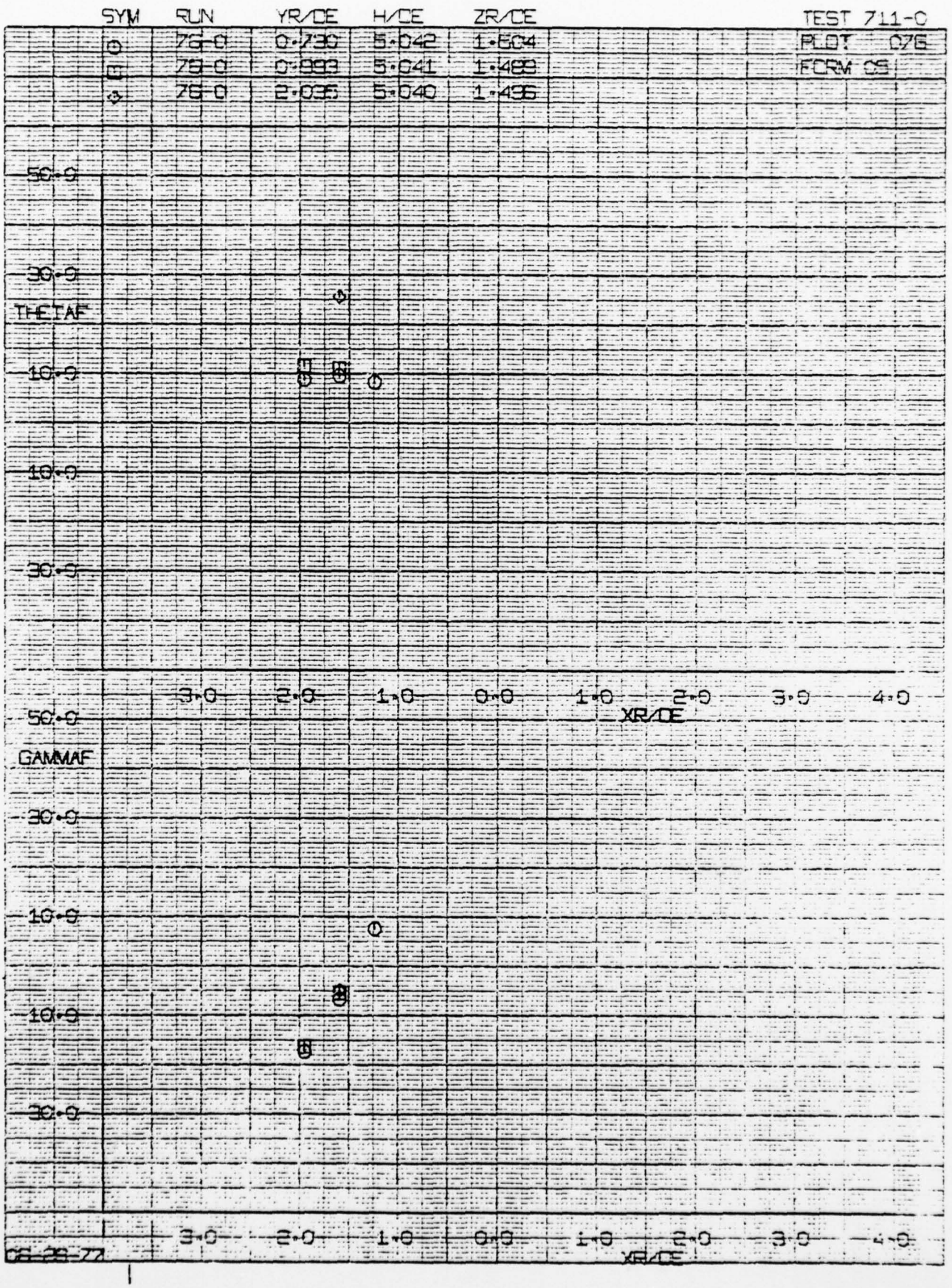

SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-0
74-0
0.386
8.045
5.525
PLOT 074
FORM 06
0.90
0.80
0.70
0.60
T/R
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-29-77

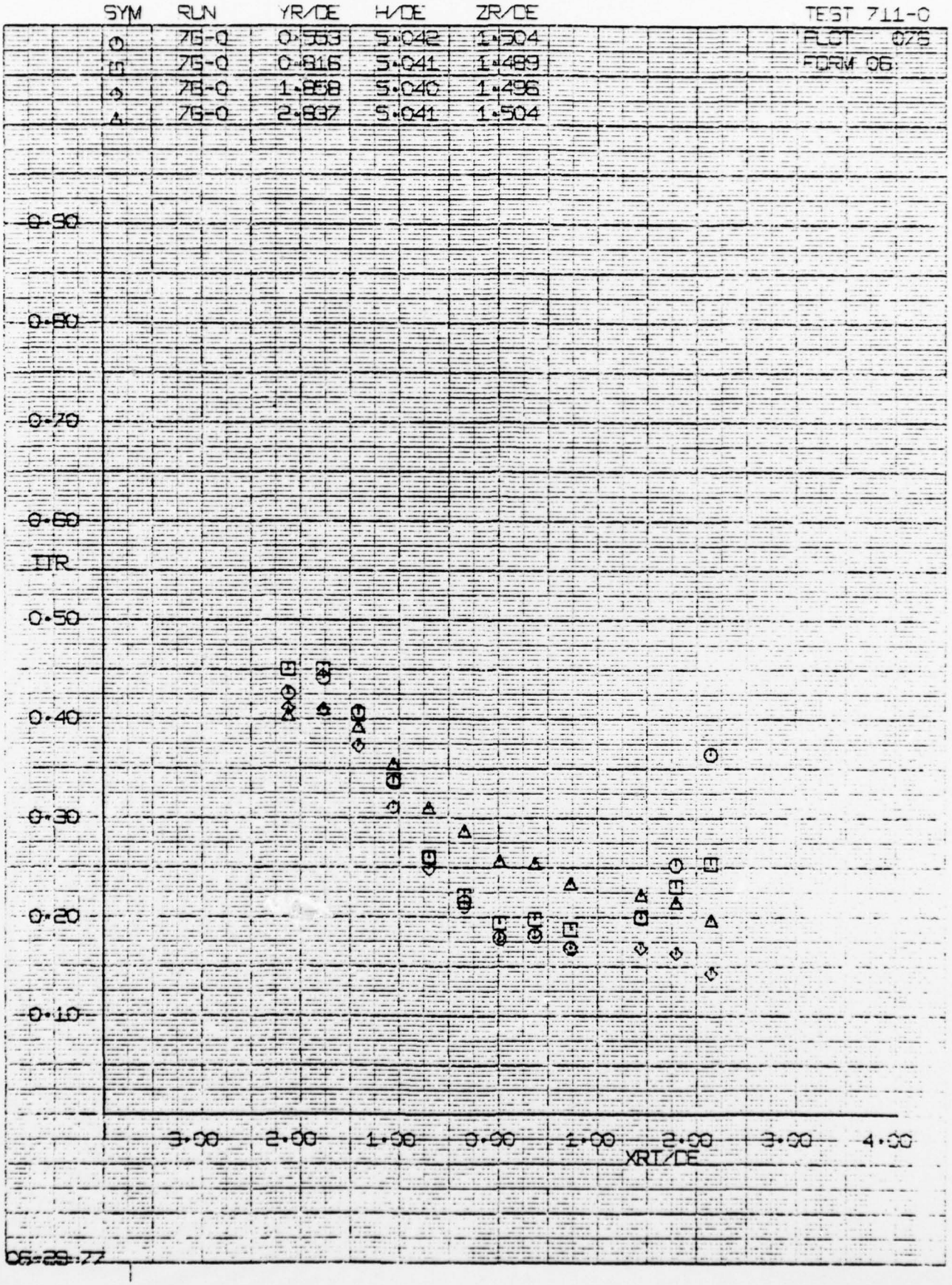
SYM	RUN	YR/DE	H/DE	ZR/DE
⊕	75-0	1.149	8.040	6.766
⊞	75-0	0.191	8.045	6.766
⊗	75-0	0.340	8.045	6.773
△	75-0	0.958	8.044	6.766

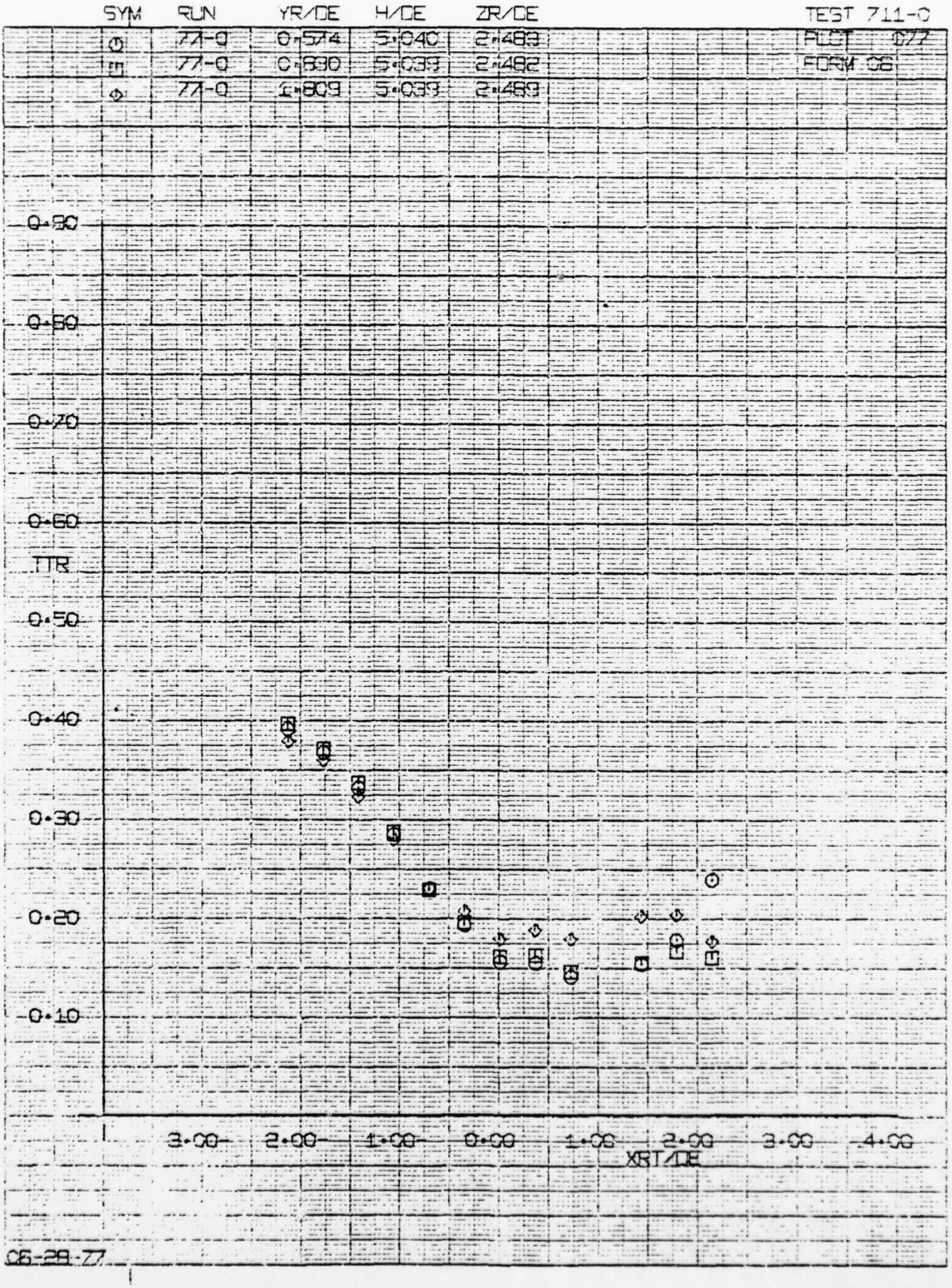
TEST 711-0
PLOT 075
FORM 05

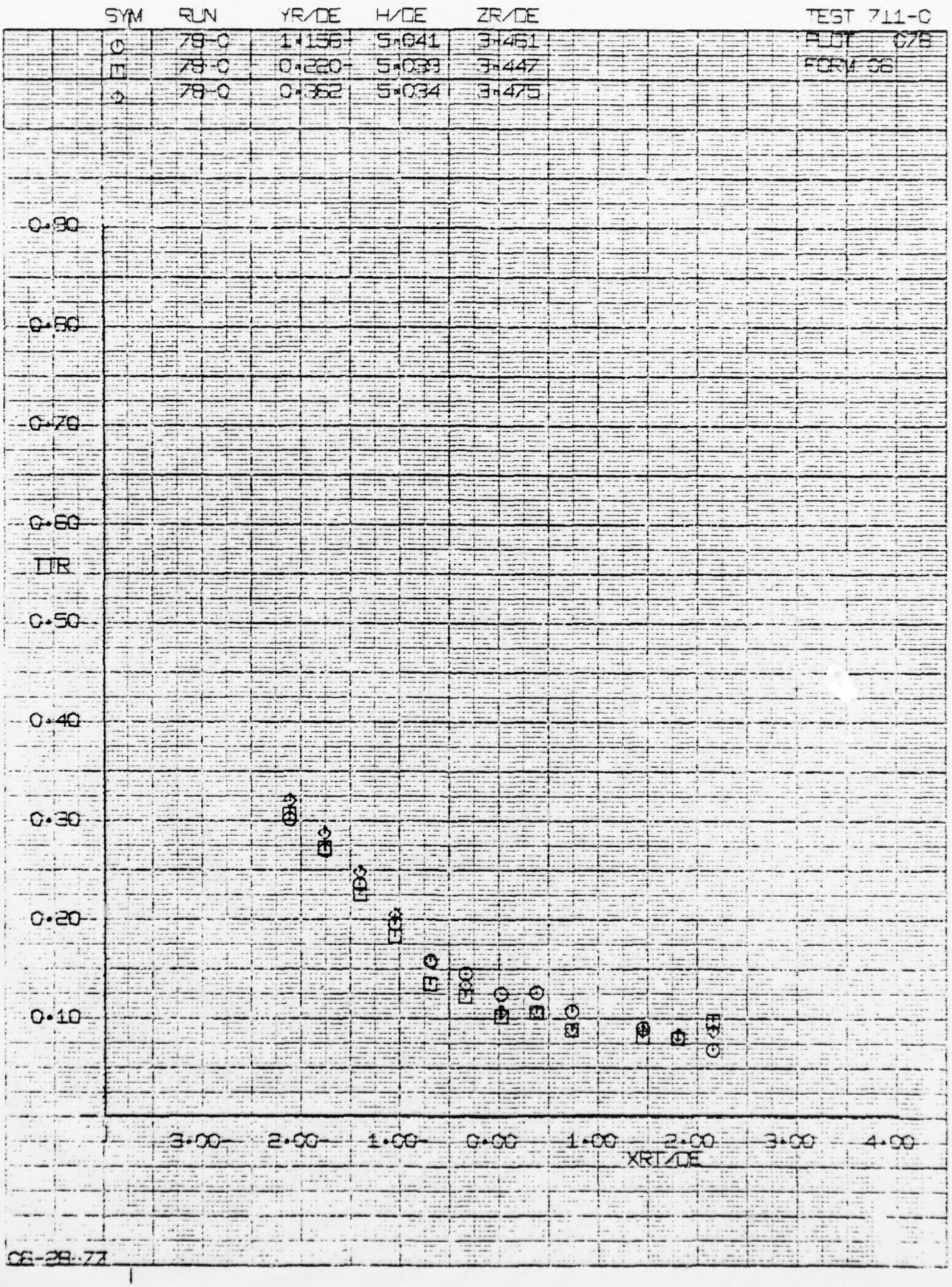


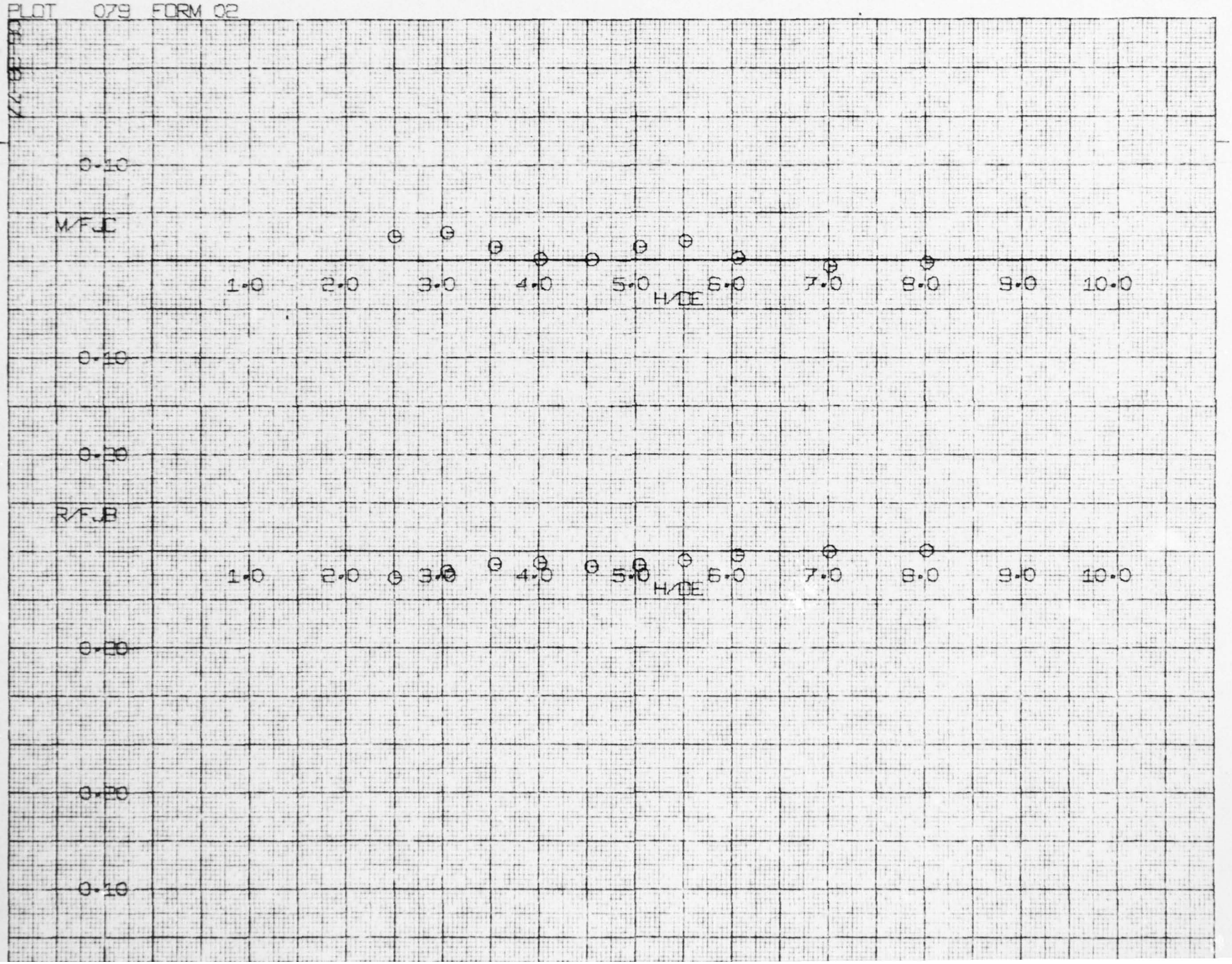

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 075
FORM 04
76-0 0.730 5.042 1.504
76-0 0.393 5.041 1.483
76-0 2.035 5.040 1.496
76-0 3.014 5.041 1.504
MASE
LB SEC
FT3
Q FV
PSI
XR/DE
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
1.0 0.8 0.6 0.4 0.2
OZ-29-77

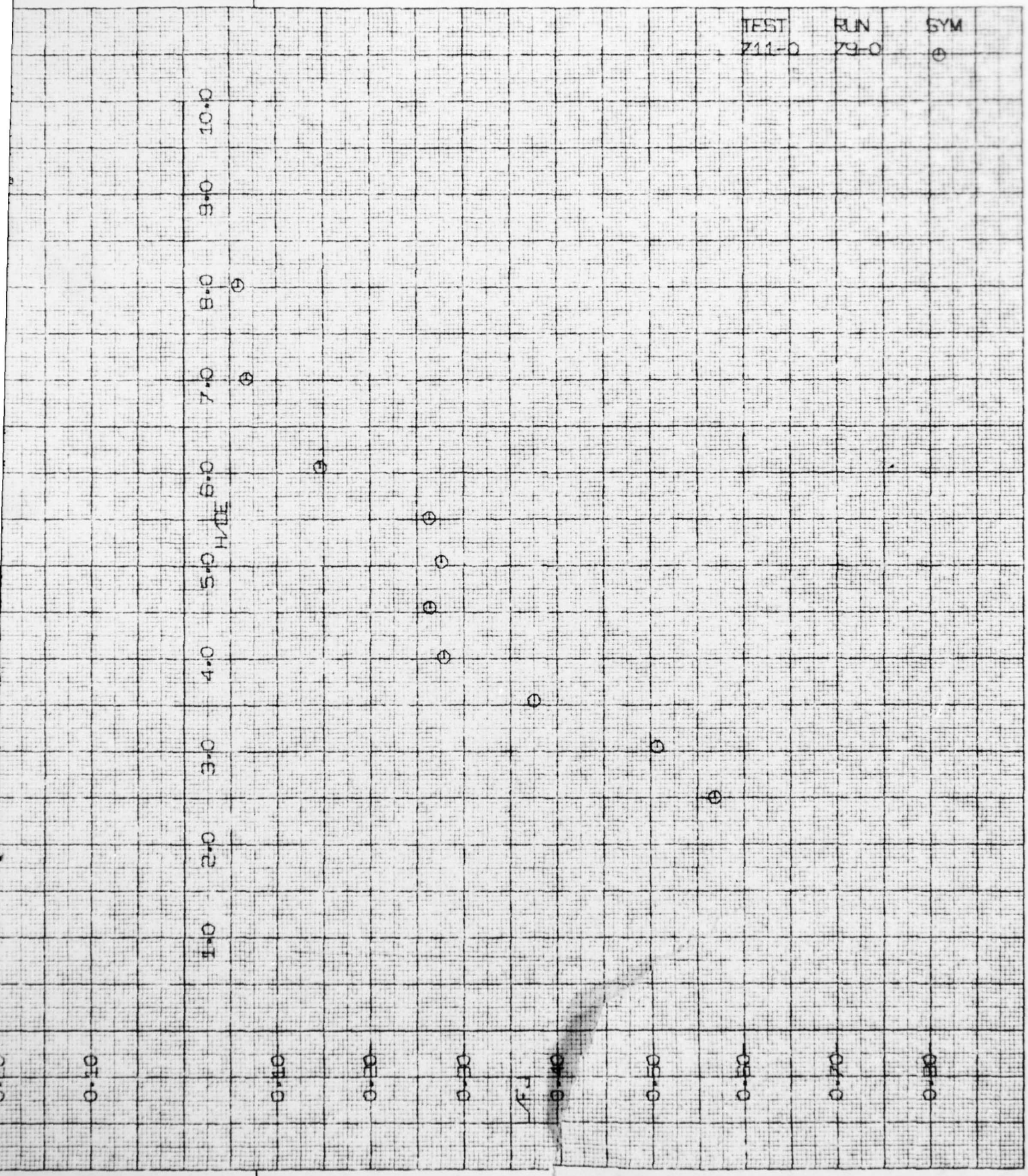

SYM RUN YR/DE H/DE ZR/DE
76-0 0.730 5.042 1.804
78-0 0.893 5.041 1.488
76-0 2.035 5.040 1.436
TEST 711-0
PLOT 076
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
05-28-77


SYM RUN YR/DE H/DE ZR/DE
76-0 0.563 5.042 1.504
76-0 0.816 5.041 1.489
76-0 1.858 5.040 1.496
76-0 2.837 5.041 1.504
TEST 711-0
FLGT 026
FORM 06
0.90
0.80
0.70
0.60
YR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-29-77


SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 077
FORM 06
77-0 0.574 5.040 2.483
77-0 0.630 5.039 2.482
77-0 1.809 5.039 2.489
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-28-77


SYM RUN YR/DE H/DE ZR/DE
78-0 1.156 5.041 3.461
78-0 0.220 5.033 3.447
78-0 0.362 5.034 3.475
TEST 711-0
PLOT 078
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
06-28-77


PLOT 079 FORM 02
0.10
M/F.JC
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
R/F.JB
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
0.20
0.10

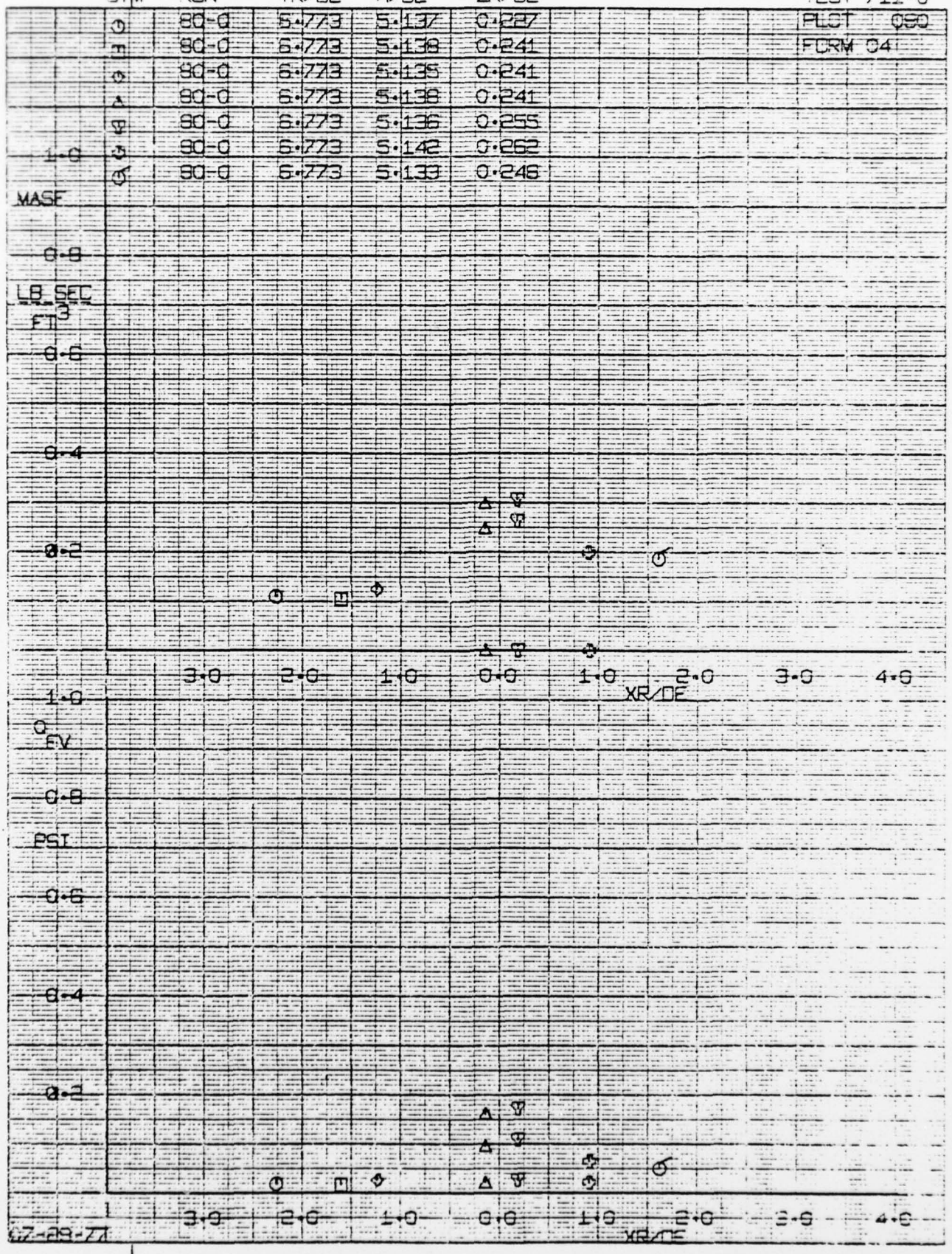

TEST
711-0
RUN
79-0
SYM
0.01
0.6
0.8
0.7
0.9
0.5
0.4
0.3
0.2
0.1
H/DE
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

2

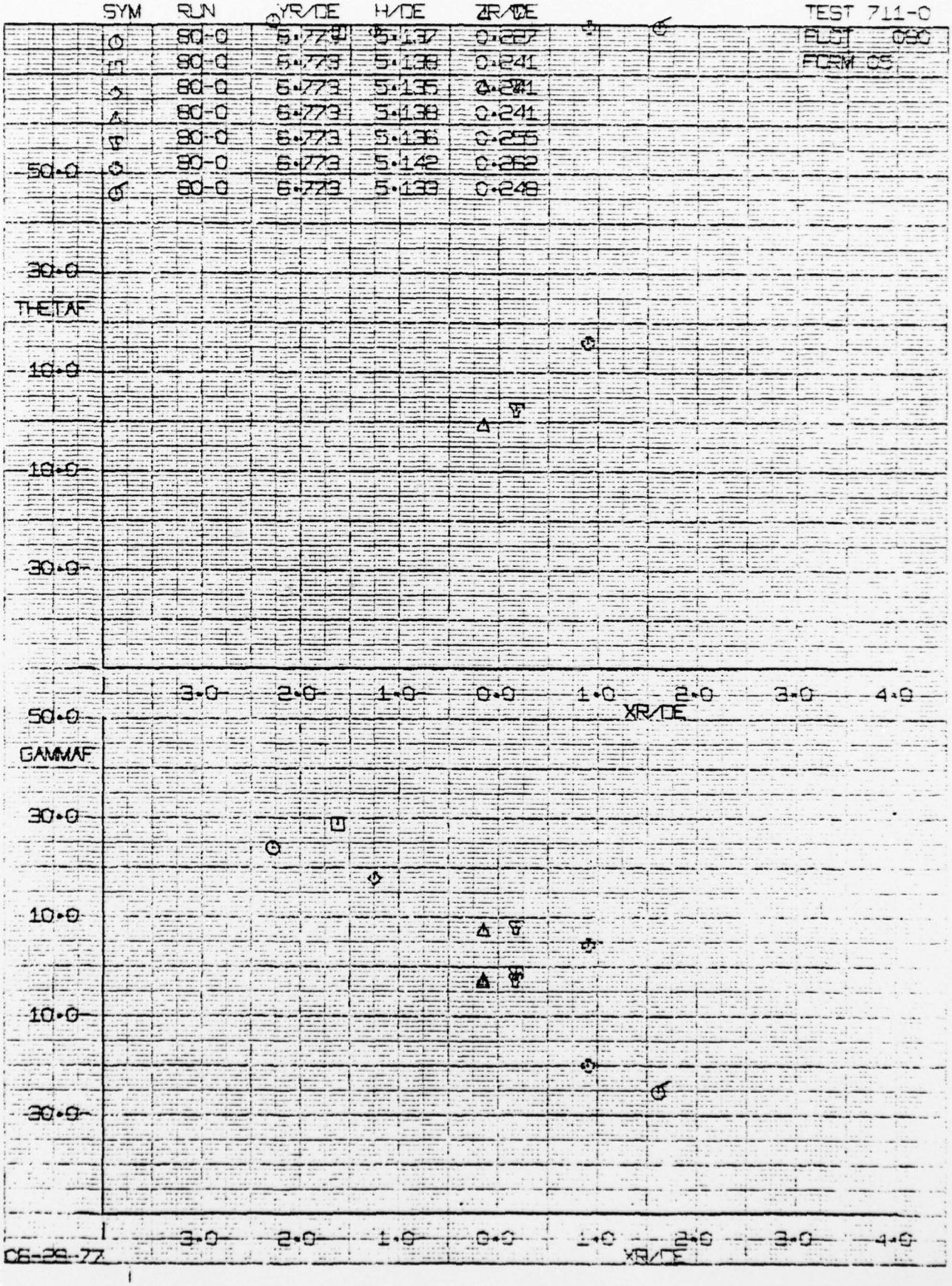
TEST 711-C

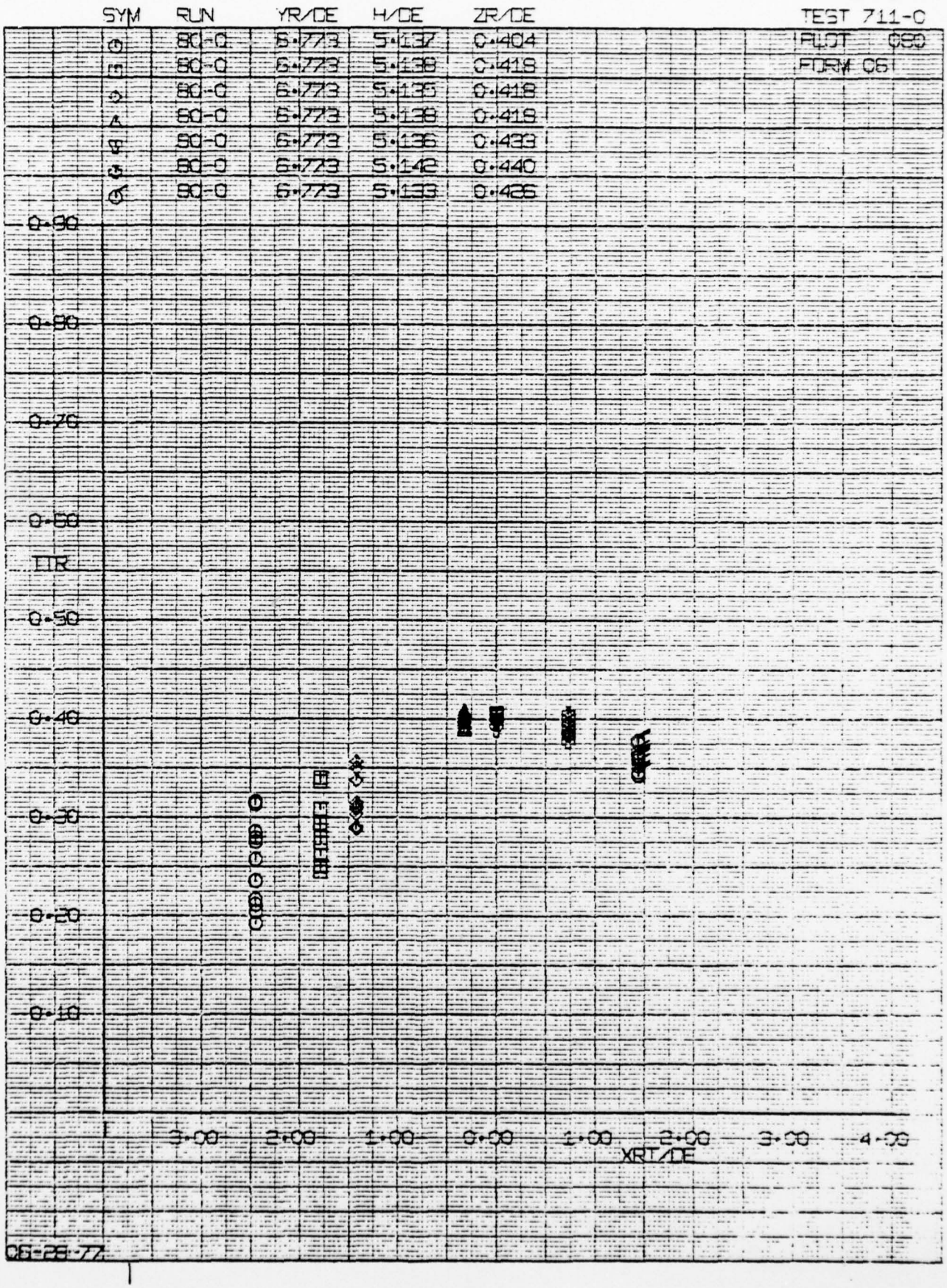
SYM	RUN	YR/DE	H/DE	ZR/DE
⊙	80-0	6.773	5.137	0.227
□	80-0	6.773	5.138	0.241
◇	80-0	6.773	5.135	0.241
△	80-0	6.773	5.138	0.241
▽	80-0	6.773	5.136	0.255
⊙	80-0	6.773	5.142	0.262
♂	80-0	6.773	5.133	0.248

PLOT 050
FORM 04



07-28-77


SYM
RUN
YR/DE
H/DE
ZR/DE
TEST 711-0
FLST 090
FORM 05
80-0 6.772 5.137 0.227
80-0 6.773 5.138 0.241
80-0 6.773 5.135 0.241
80-0 6.773 5.138 0.241
80-0 6.773 5.136 0.255
80-0 6.773 5.142 0.262
80-0 6.773 5.133 0.248
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-29-77


SYM RUN YR/DE H/DE ZR/DE
80-0 6.773 5.137 0.404
80-0 6.773 5.138 0.418
80-0 6.773 5.135 0.418
80-0 6.773 5.138 0.419
80-0 6.773 5.136 0.433
80-0 6.773 5.142 0.440
80-0 6.773 5.133 0.426
TEST 711-C
PLOT 080
FORM 06
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-28-77

SYM	RUN	YR/DE	H/DE	ZR/DE
◷	81-0	6.773	2.574	0.234
□	81-0	6.773	2.586	0.234
◇	81-0	6.773	2.575	0.241
△	81-0	6.773	2.575	0.234
⊕	81-0	6.773	2.575	0.248
◁	81-0	6.773	2.582	0.241
◁	81-0	6.773	2.575	0.255

TEST 711-0
PLOT 021
FORM 041

MASS
LB SEC
FT^3

1.0
0.8
0.6
0.4
0.2

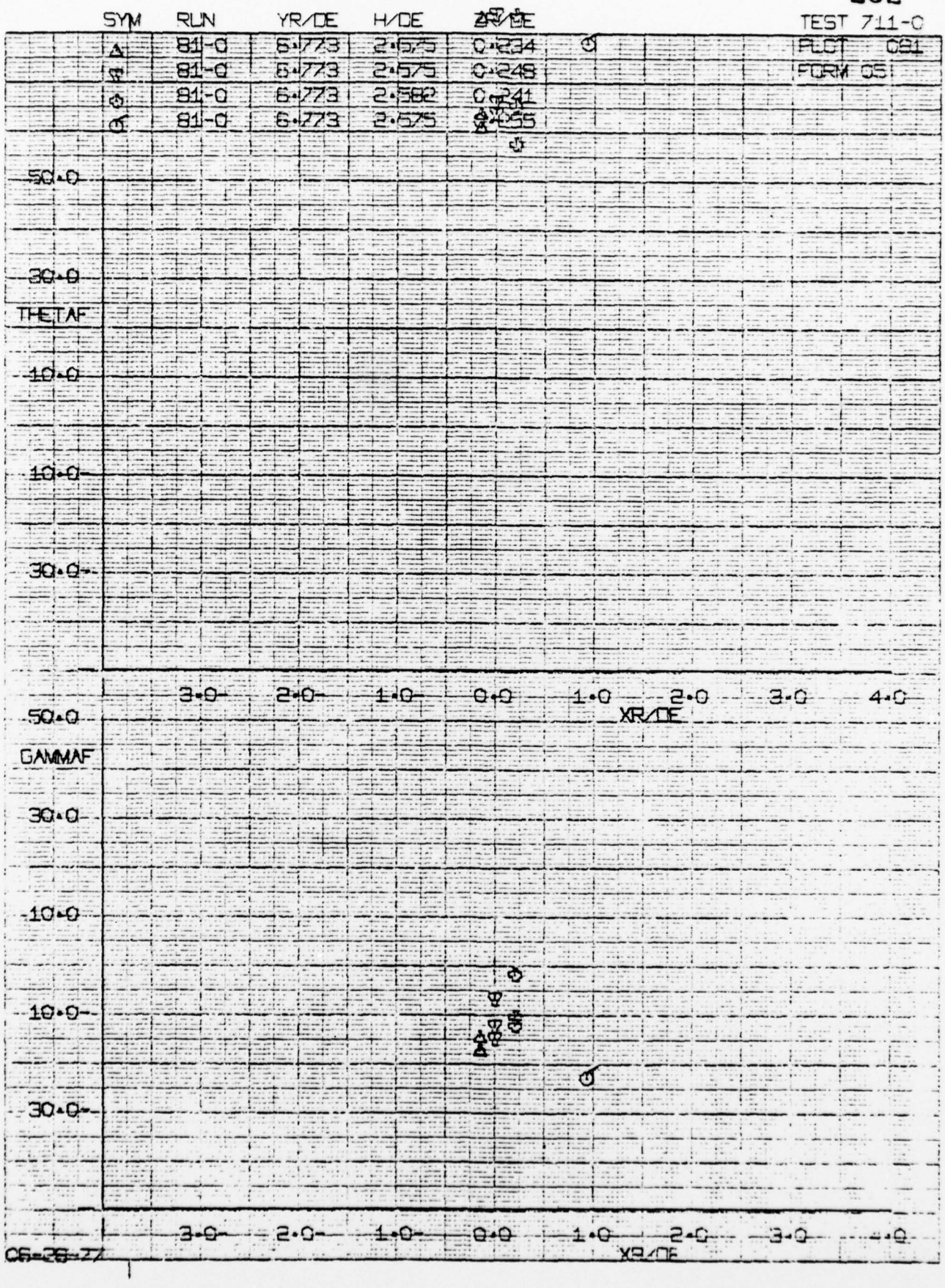
-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0
XR/DE

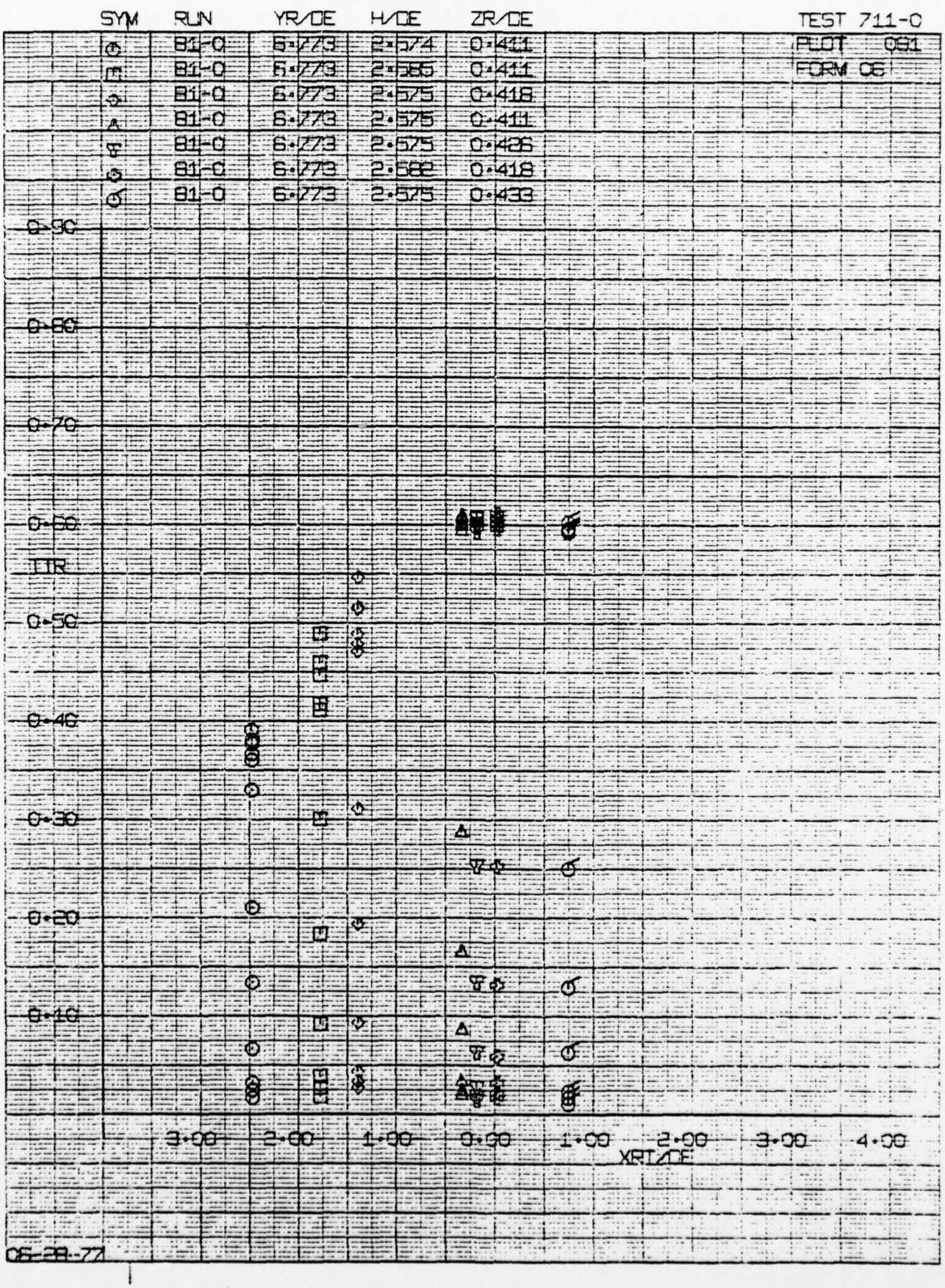
Q
FV
PSI

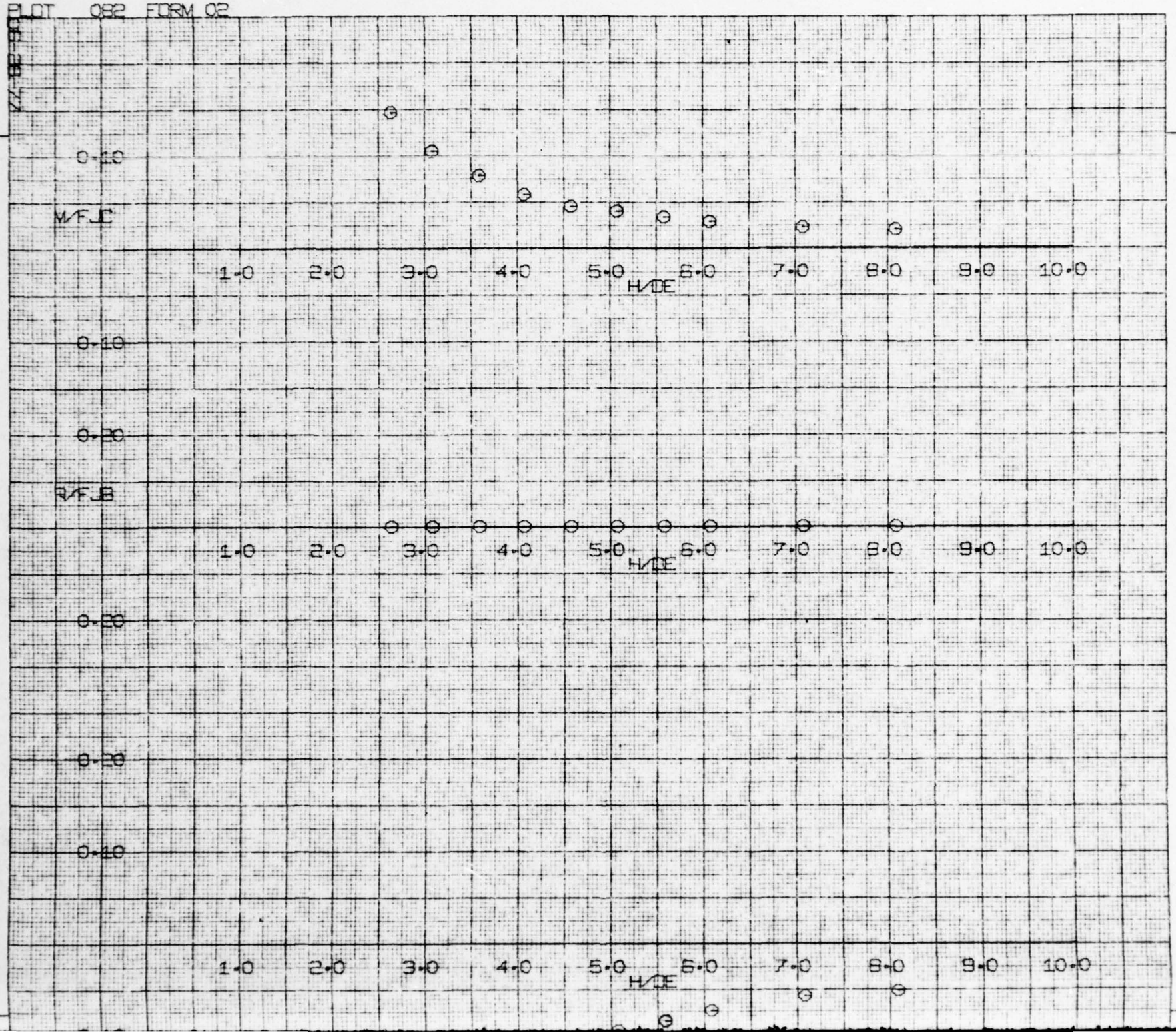
1.0
0.8
0.6
0.4
0.2

-3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0
XR/DE

07-29-77

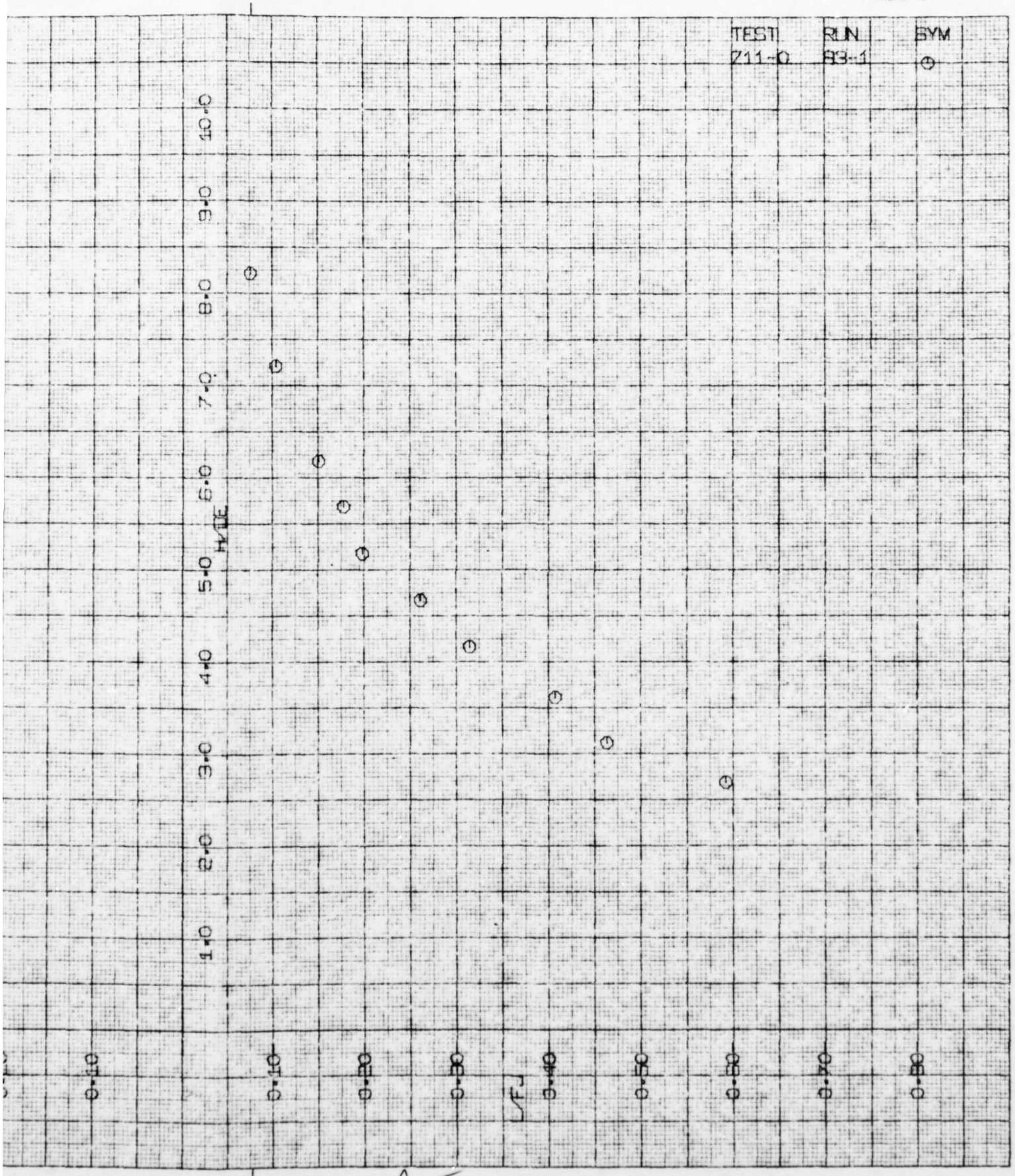

SYM RUN YR/DE H/DE ZR/DE
81-0 6.773 2.575 0.234
81-0 6.773 2.575 0.248
81-0 6.773 2.582 0.241
81-0 6.773 2.575 0.255
TEST 711-0
PLOT 081
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-26-77

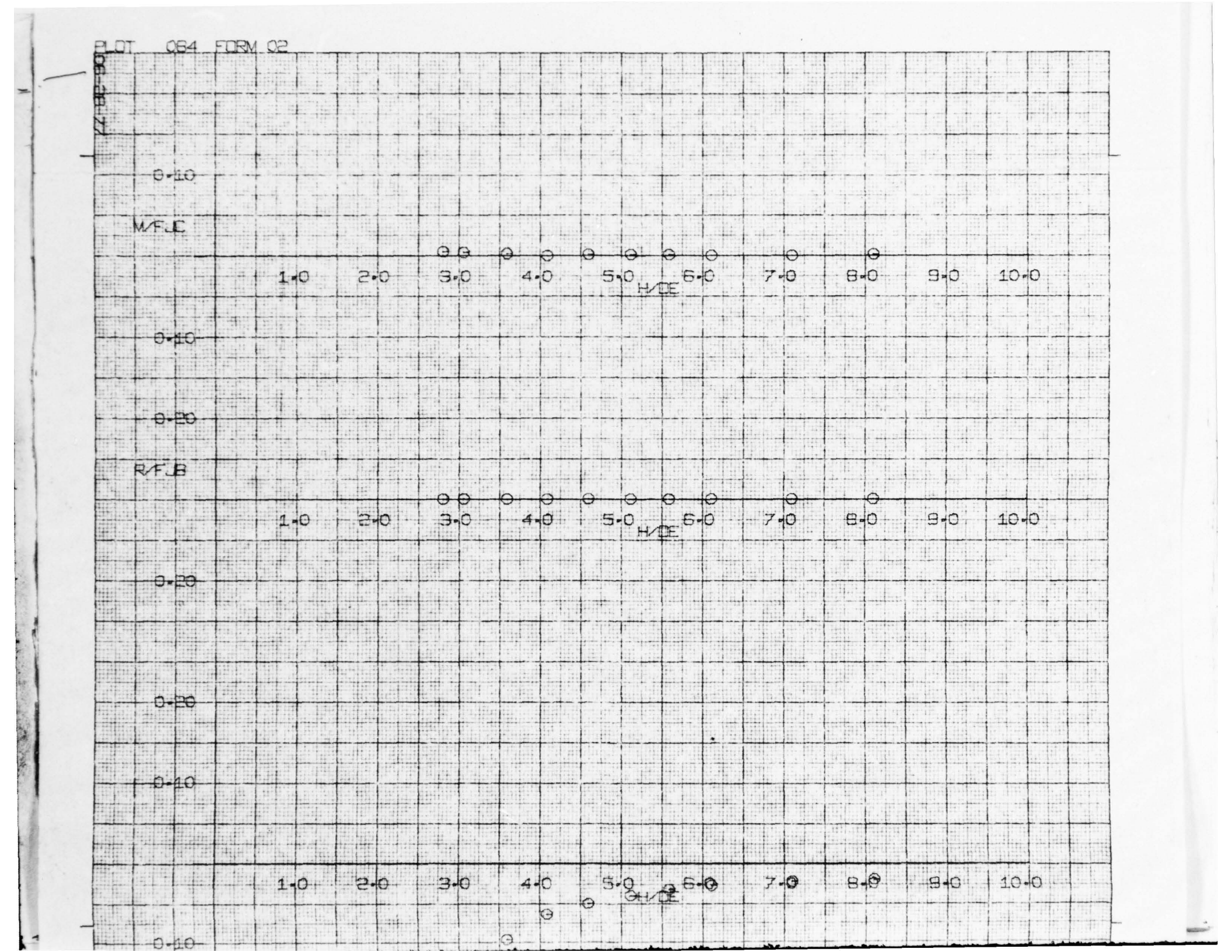

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 061
FORM 06
81-0 6.773 2.574 0.411
81-0 6.773 2.585 0.411
81-0 6.773 2.575 0.418
81-0 6.773 2.575 0.411
81-0 6.773 2.575 0.426
81-0 6.773 2.582 0.418
81-0 6.773 2.575 0.433
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-28-77

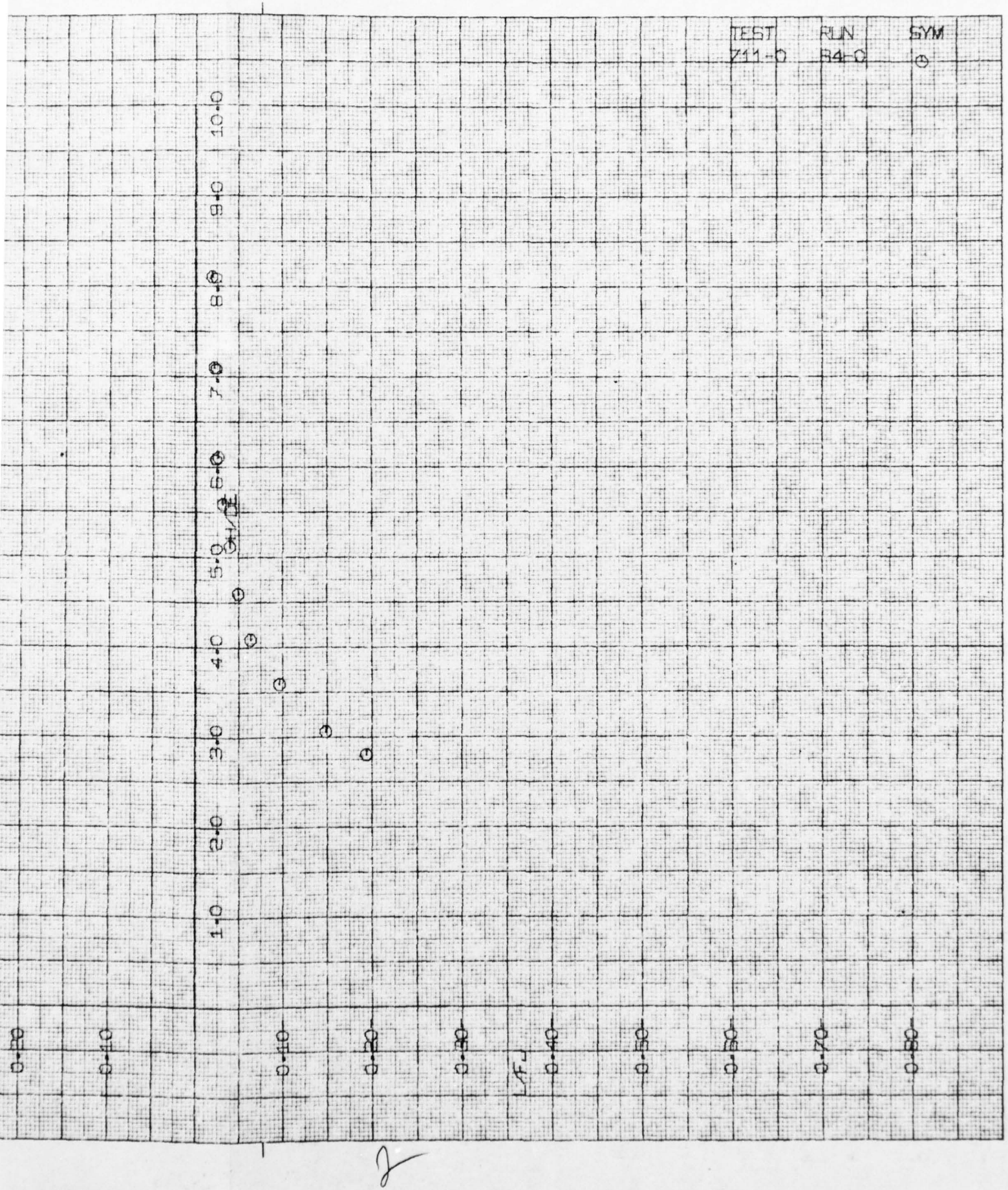

PLOT 082 FORM 02
0.10
M/F JC
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
R/F JB
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
0.30
0.40
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE

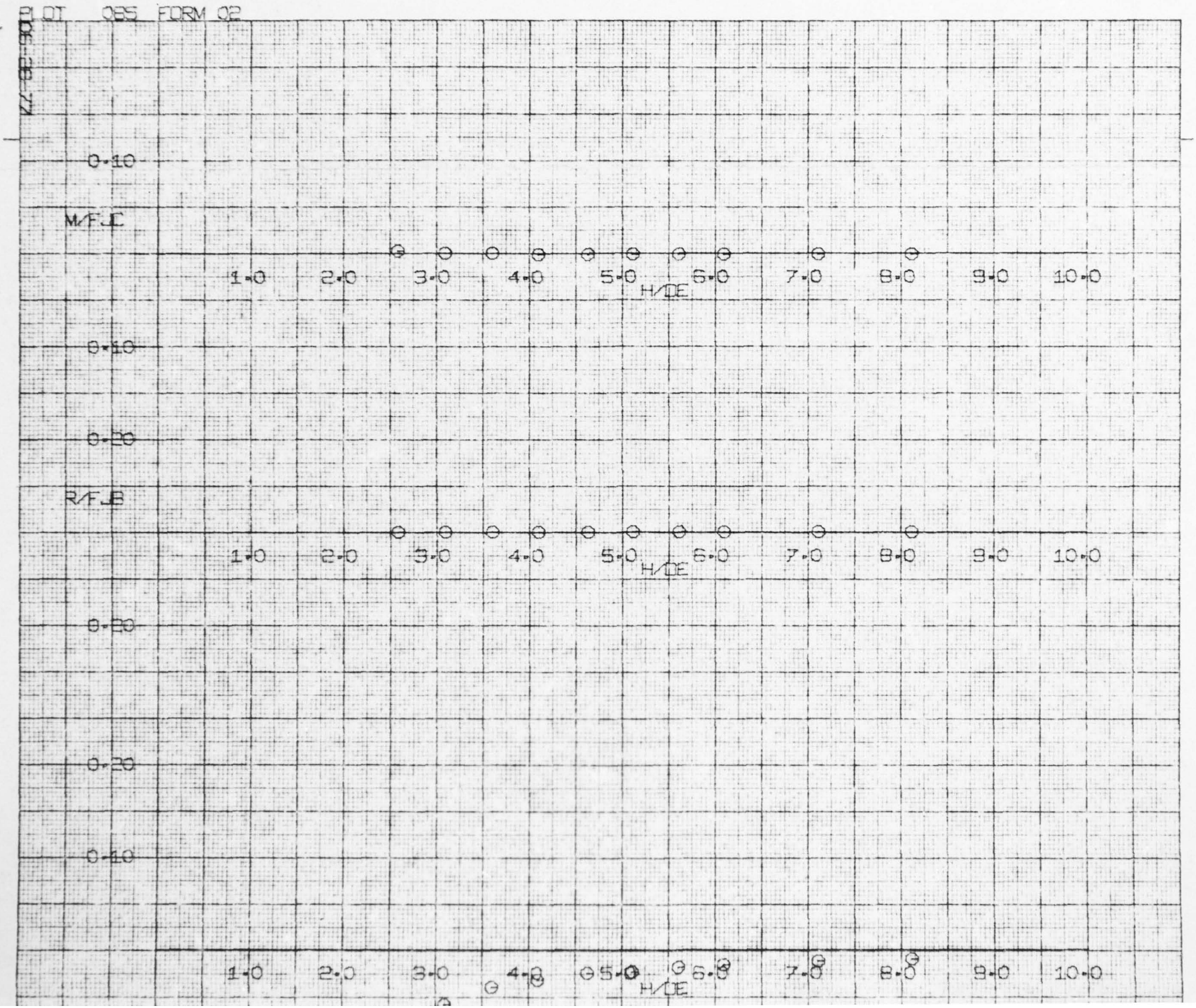
TEST
711-0
RUN
82-0
SYM
0.01
0.6
0.8
0.7
0.9
0.5
0.4
0.3
0.2
0.1
H/E
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
F/E

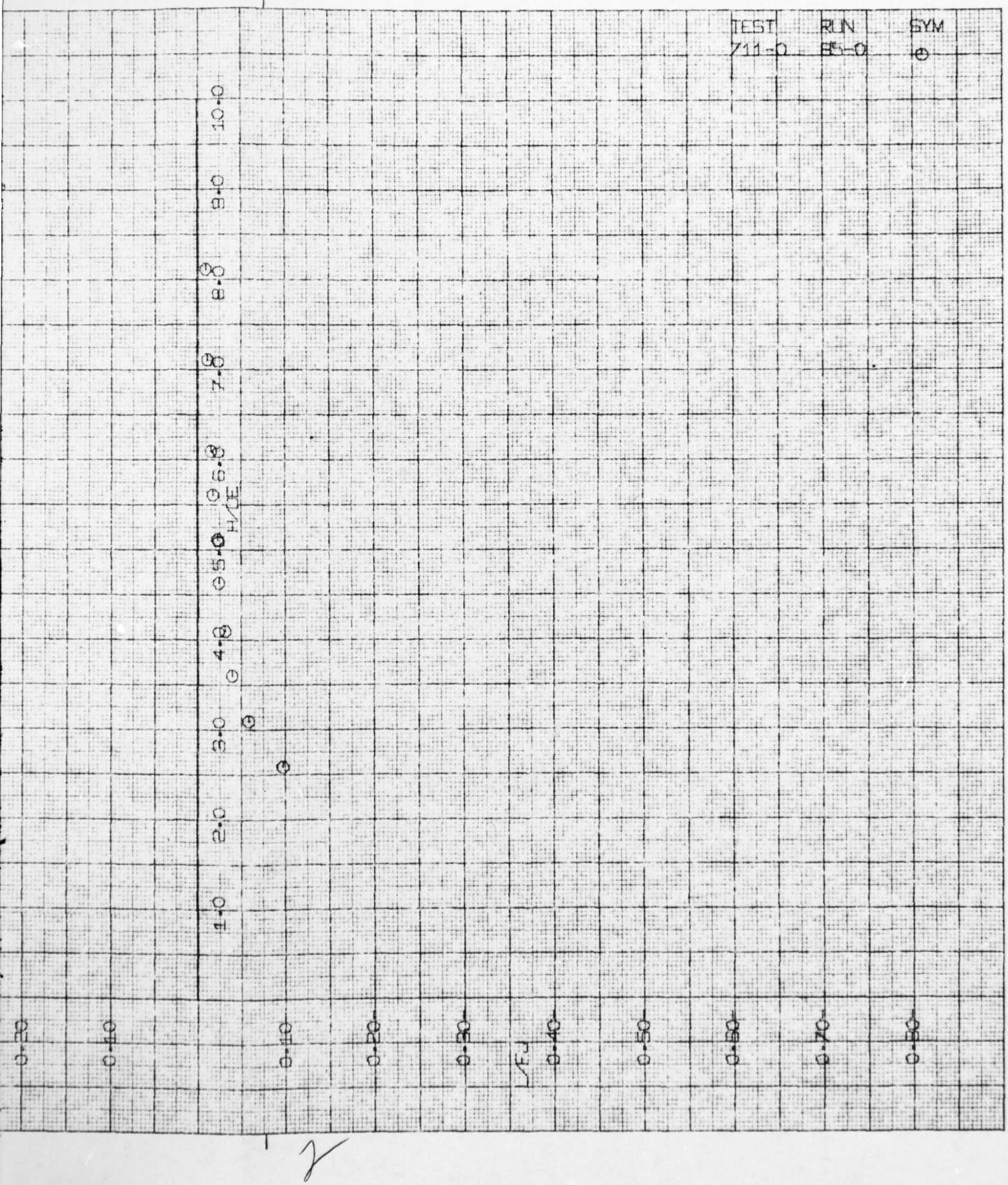
PLOT OBS FROM 02
M/EJ
R/EJB
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
EJ/H


TEST
Z11-0
RUN
83-1
SYM
0.10
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
ETA/H
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
LFJ

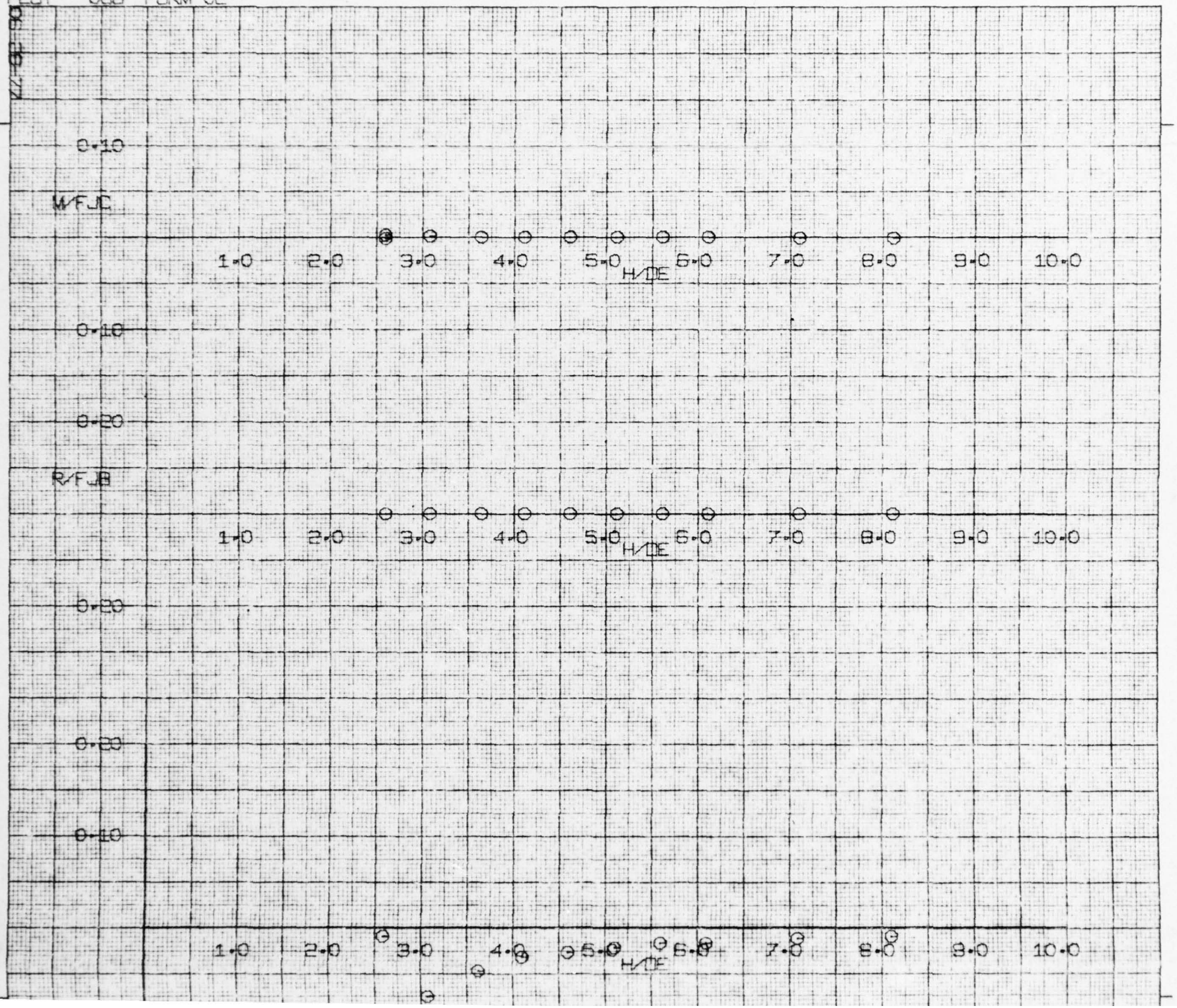

PLOT 064 FORM 02
0·10
M/F JC
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
0·10
0·20
R/F JB
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
0·20
0·20
0·10
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE
0·10


TEST
Y11-0
RUN
B4-0
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
LFJ


PLOT OBS FORM 02
M/F JC
R/F JB
0·10
0·20
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0
H/DE

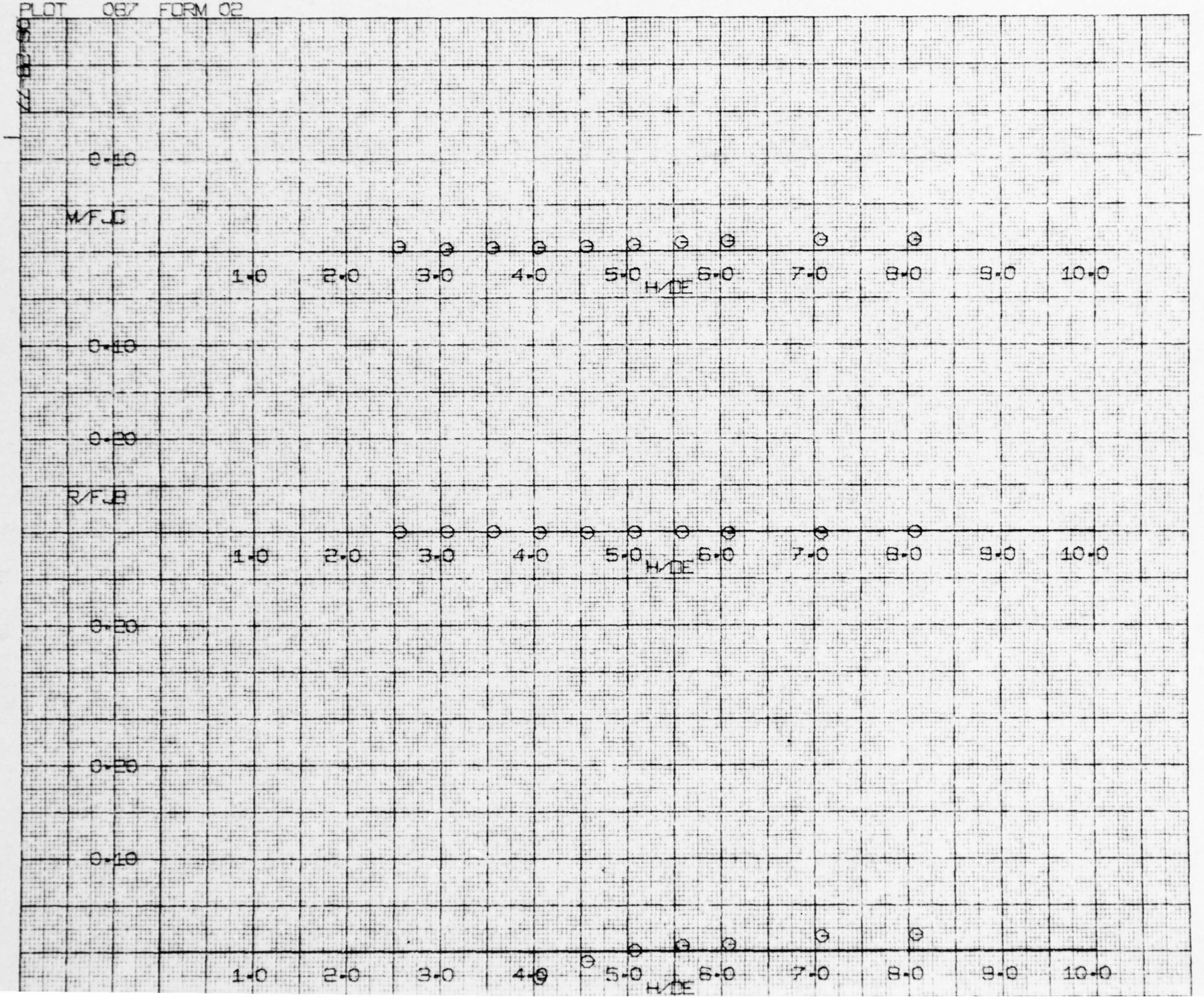

TEST RUN SYM
711-0 85-0
1.0
.8
.7
.6
.5
.4
.3
.2
.1
H/E
F/J
.05
.10
.20
.30
.40
.50
.60
.70
.80
.90

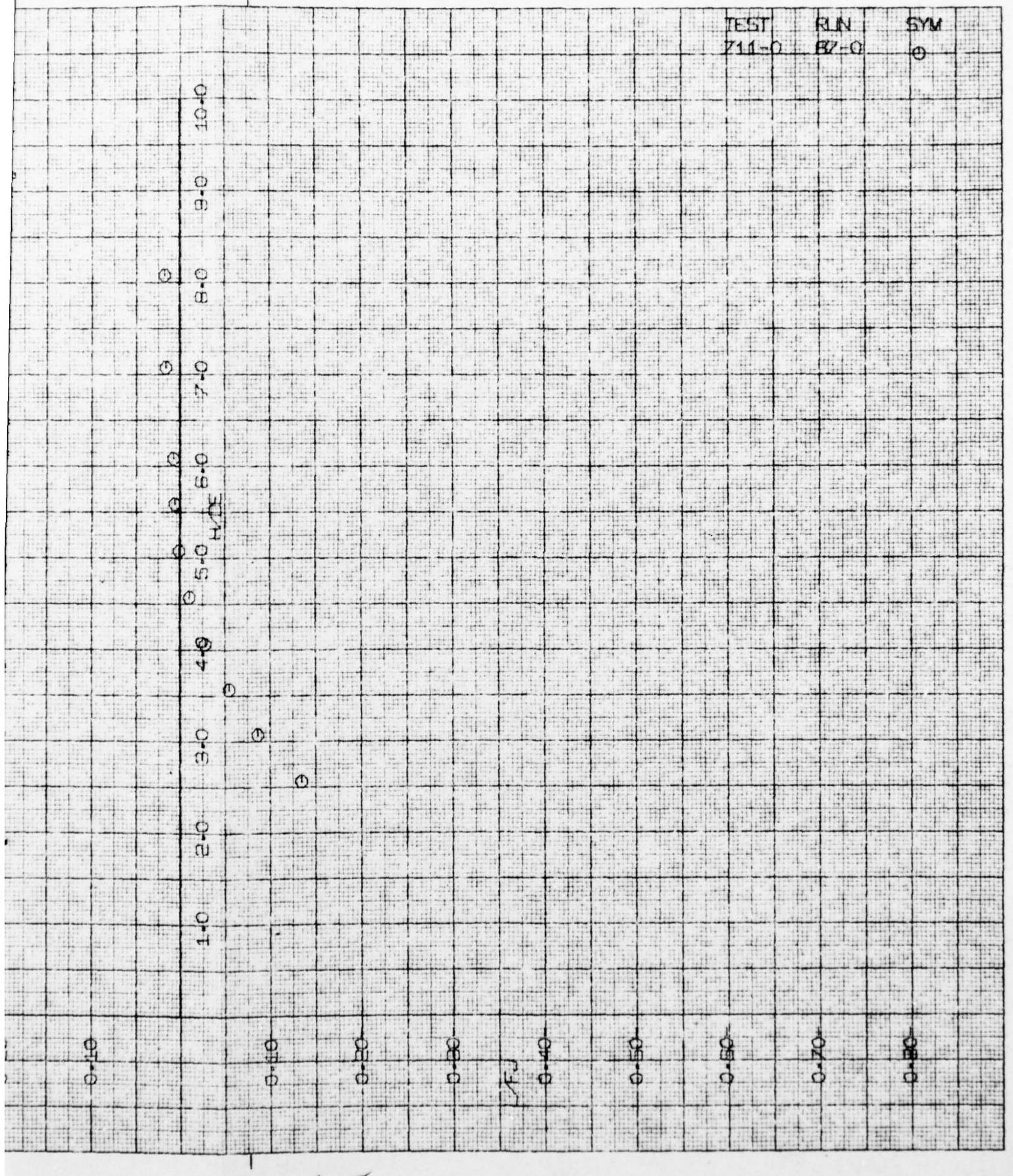
PLOT 086 FORM 02

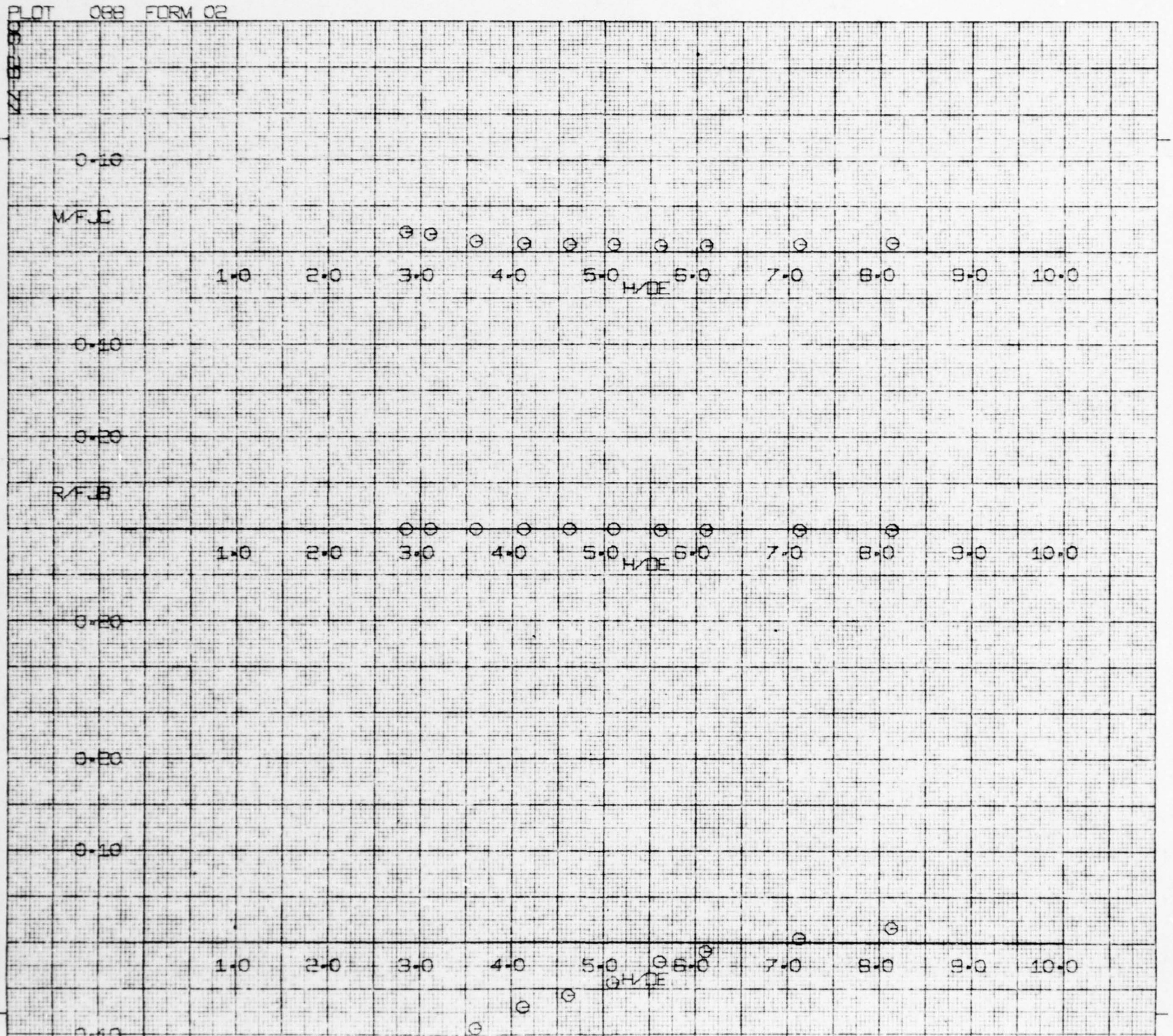


TEST
711-0
RUN
66-0
SYM
0.01
0.8
0.6
0.5
0.4
0.3
0.2
0.1
H/DE
0.0
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
L/F

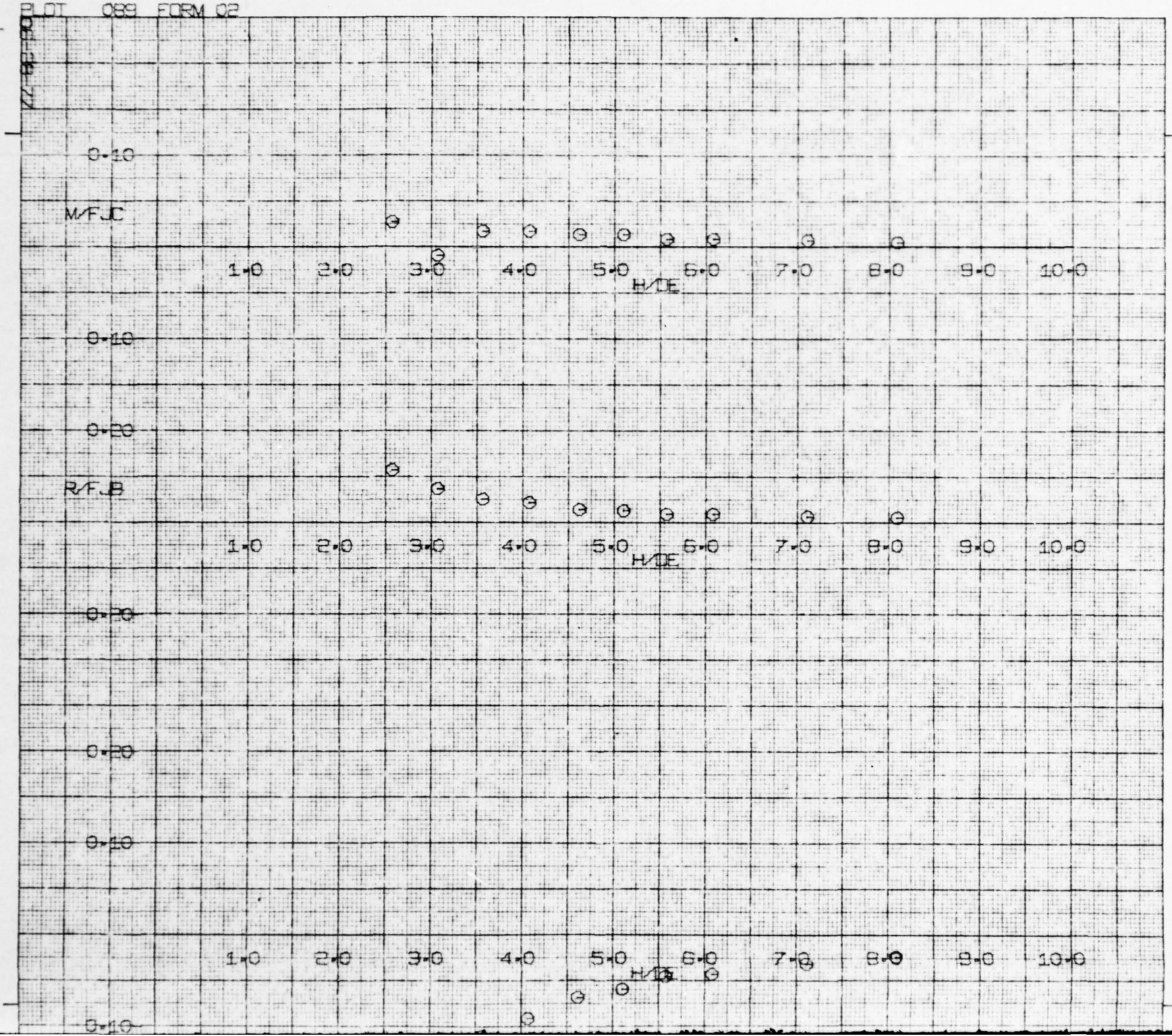
PLOT 087 FORM 02

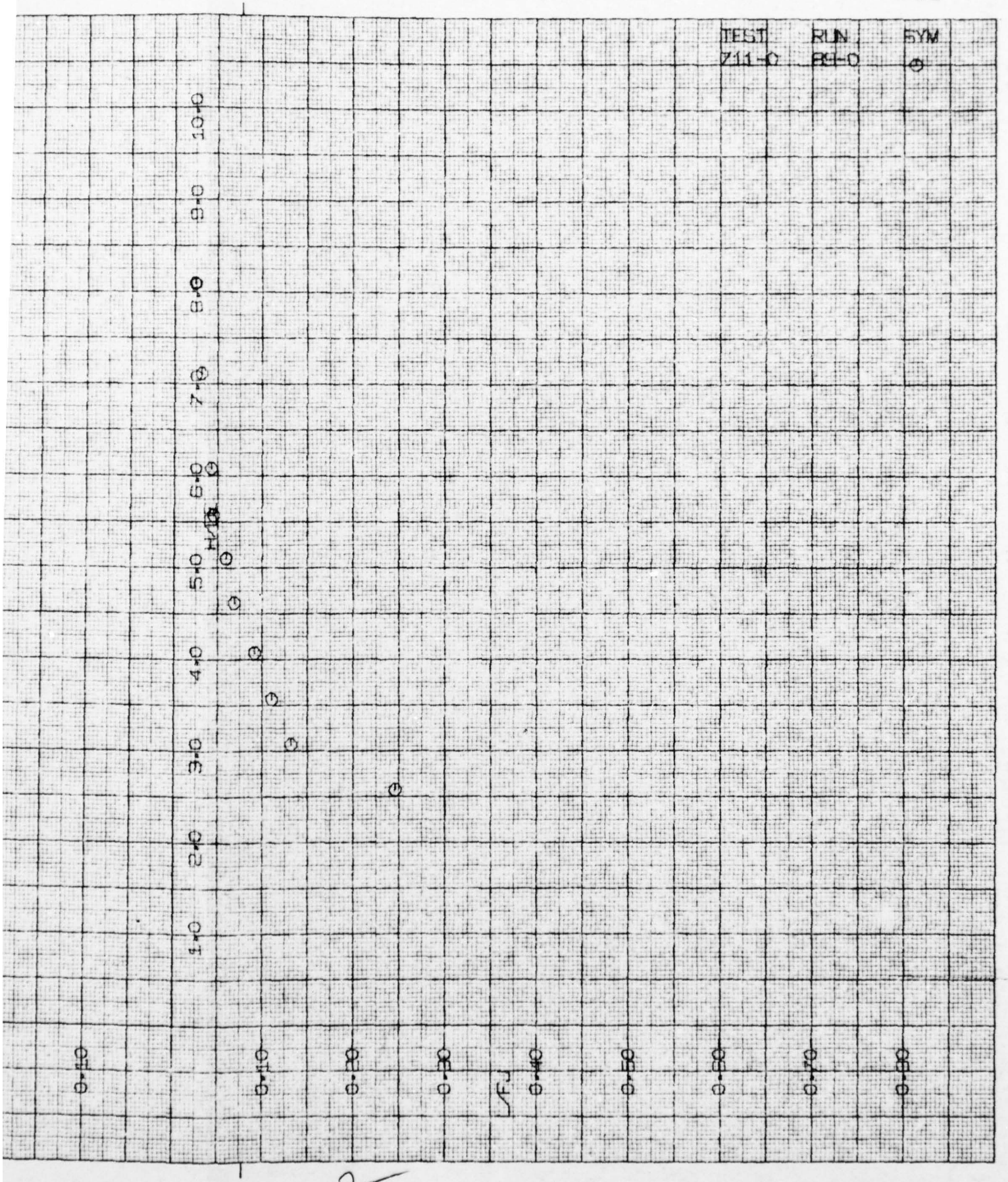


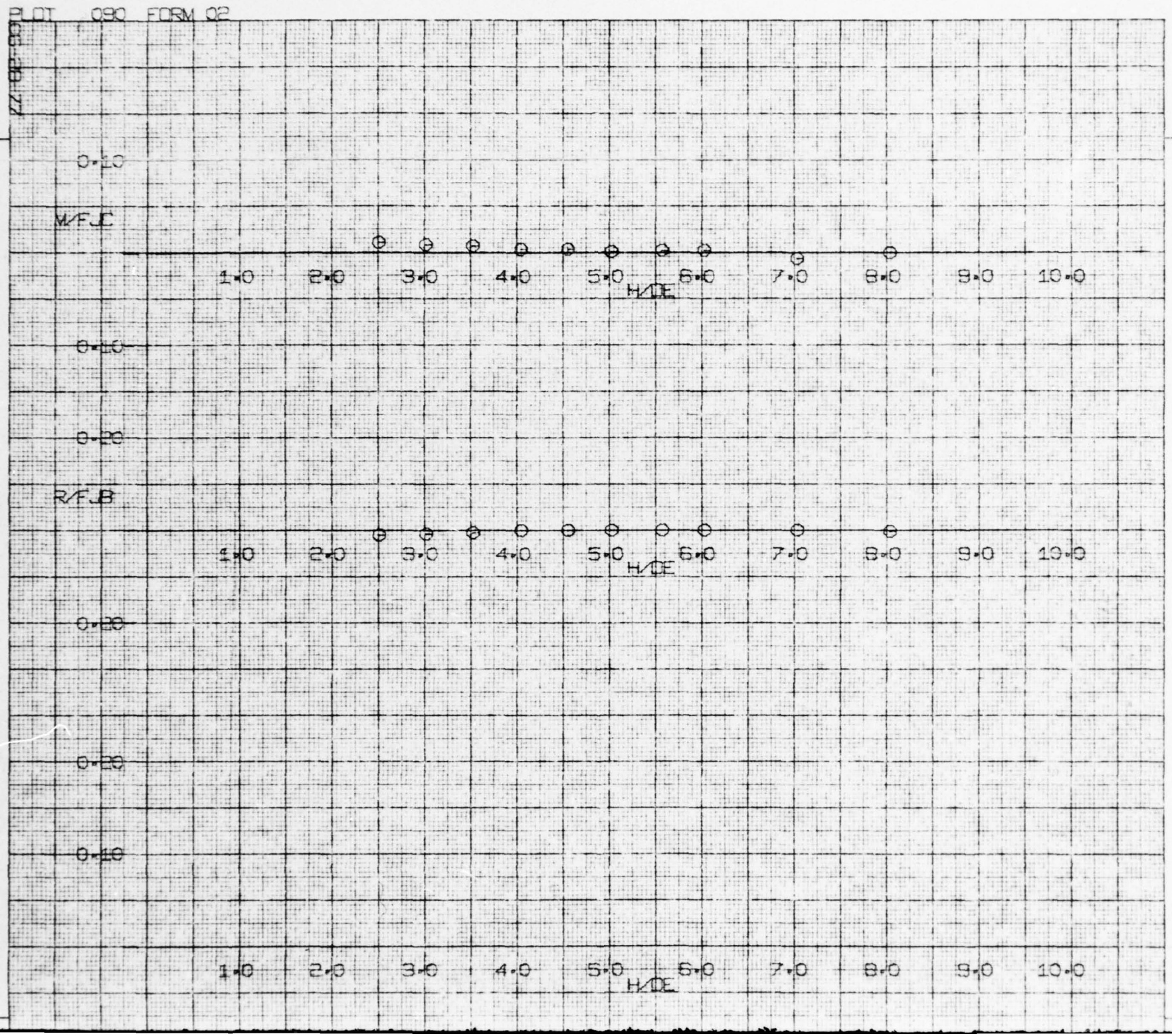

TEST
711-0
RUN
87-0
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
H/D
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8


PLOT 083 FORM 02
M/FJC
R/FJB
H/DE
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0

TEST
Z11-0
RUN
88-0
SYM
1.0-0
.9-0
.8-0
.7-0
.6-0
.5-0
.4-0
.3-0
.2-0
.1-0
EFH
.0-0
.05-0
.1-0
.15-0
.2-0
.25-0
.3-0
.35-0
.4-0
.45-0
.5-0
.55-0
.6-0
.65-0
.7-0
.75-0
.8-0
.85-0
.9-0
.95-0
1.0-0
1.05-0
1.1-0
1.15-0
1.2-0
1.25-0
1.3-0
1.35-0
1.4-0
1.45-0
1.5-0
1.55-0
1.6-0
1.65-0
1.7-0
1.75-0
1.8-0
1.85-0
1.9-0
1.95-0
2.0-0


PLOT 089 FORM 02
0.10
M/F JC
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
R/F JB
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
0.10
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0.10

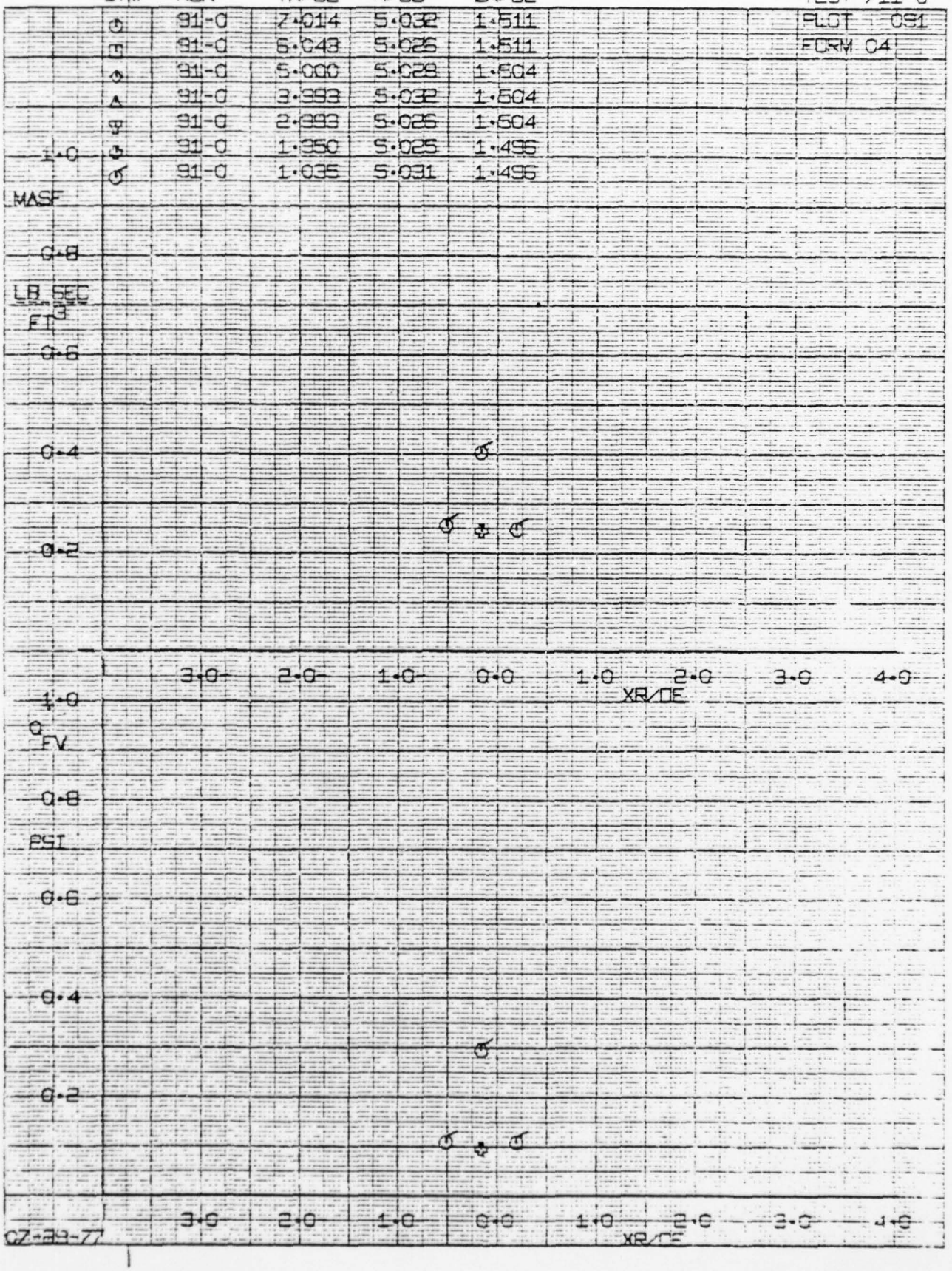

TEST
711-0
RUN
RH-0
SYM

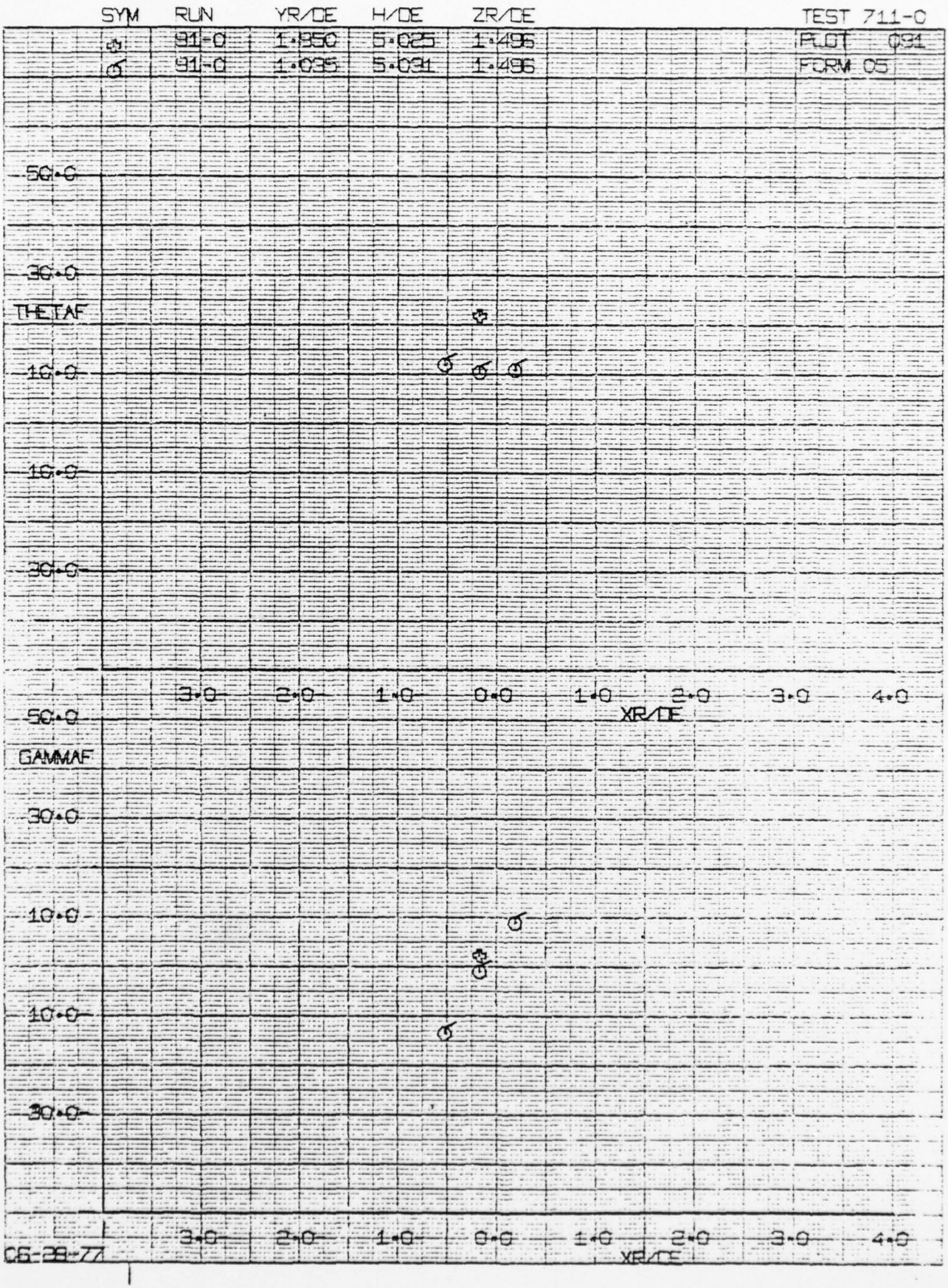

PLOT 090 FORM 02
0.10
M/F.JC
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
R/F.JB
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
0.10
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE

TEST
Z11-0
RUN
80-0
SYM
0.01
0.5
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
30KH
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
F
1
2

SYM	RUN	YR/DE	H/DE	ZR/DE
⊕	91-0	7.014	5.032	1.511
⊞	91-0	6.043	5.026	1.511
⊗	91-0	5.000	5.028	1.504
△	91-0	3.393	5.032	1.504
⊕	91-0	2.393	5.026	1.504
⊗	91-0	1.350	5.025	1.496
⊙	91-0	1.035	5.031	1.496

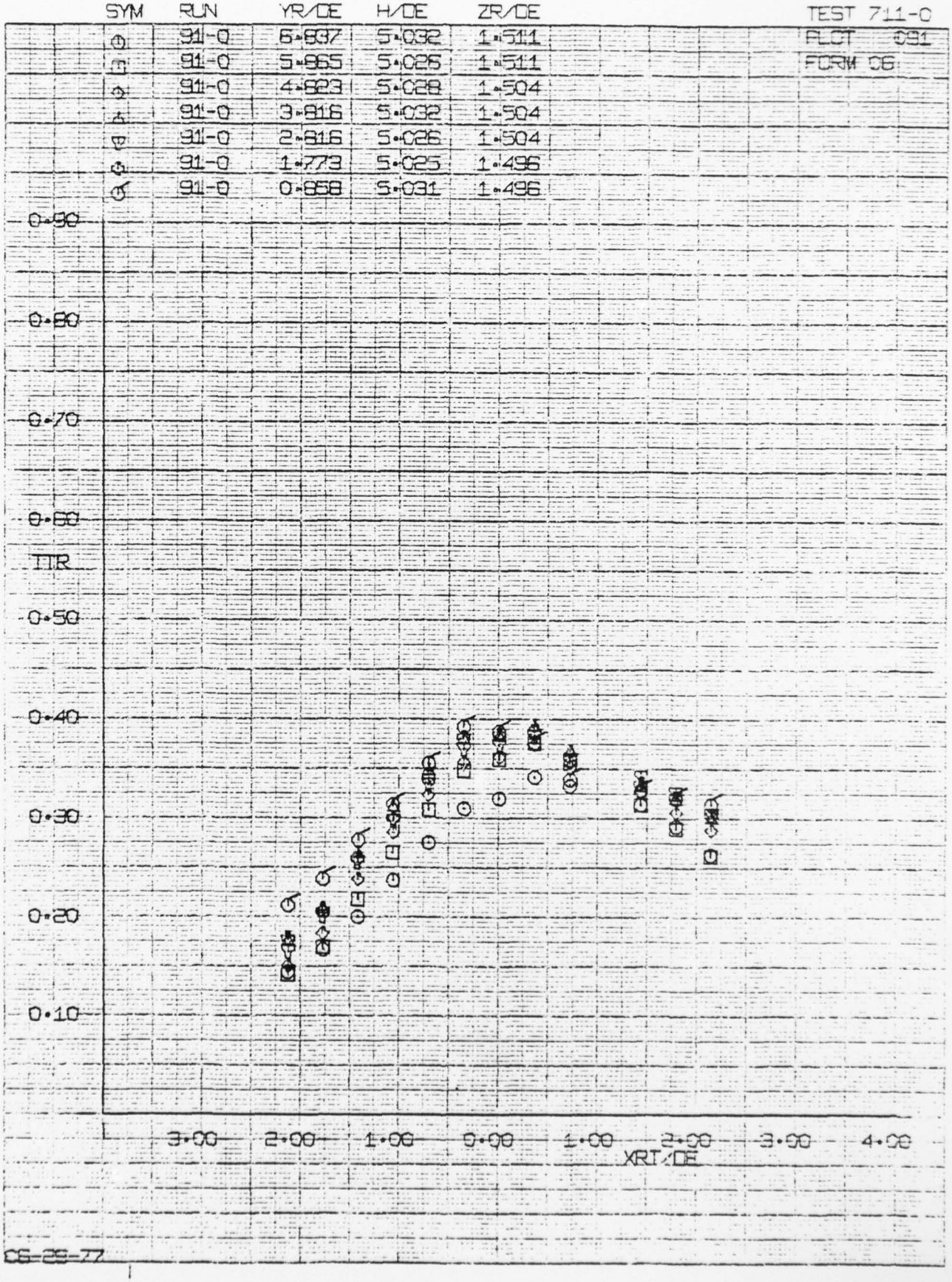
TEST 711-0
PLOT 001
FORM 04




SYM RUN YR/DE H/DE ZR/DE
91-0 1.350 5.025 1.496
91-0 1.035 5.031 1.496
TEST 711-0
PLOT 091
FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
06-28-77

TEST 711-0
PLOT 091
FORM 06

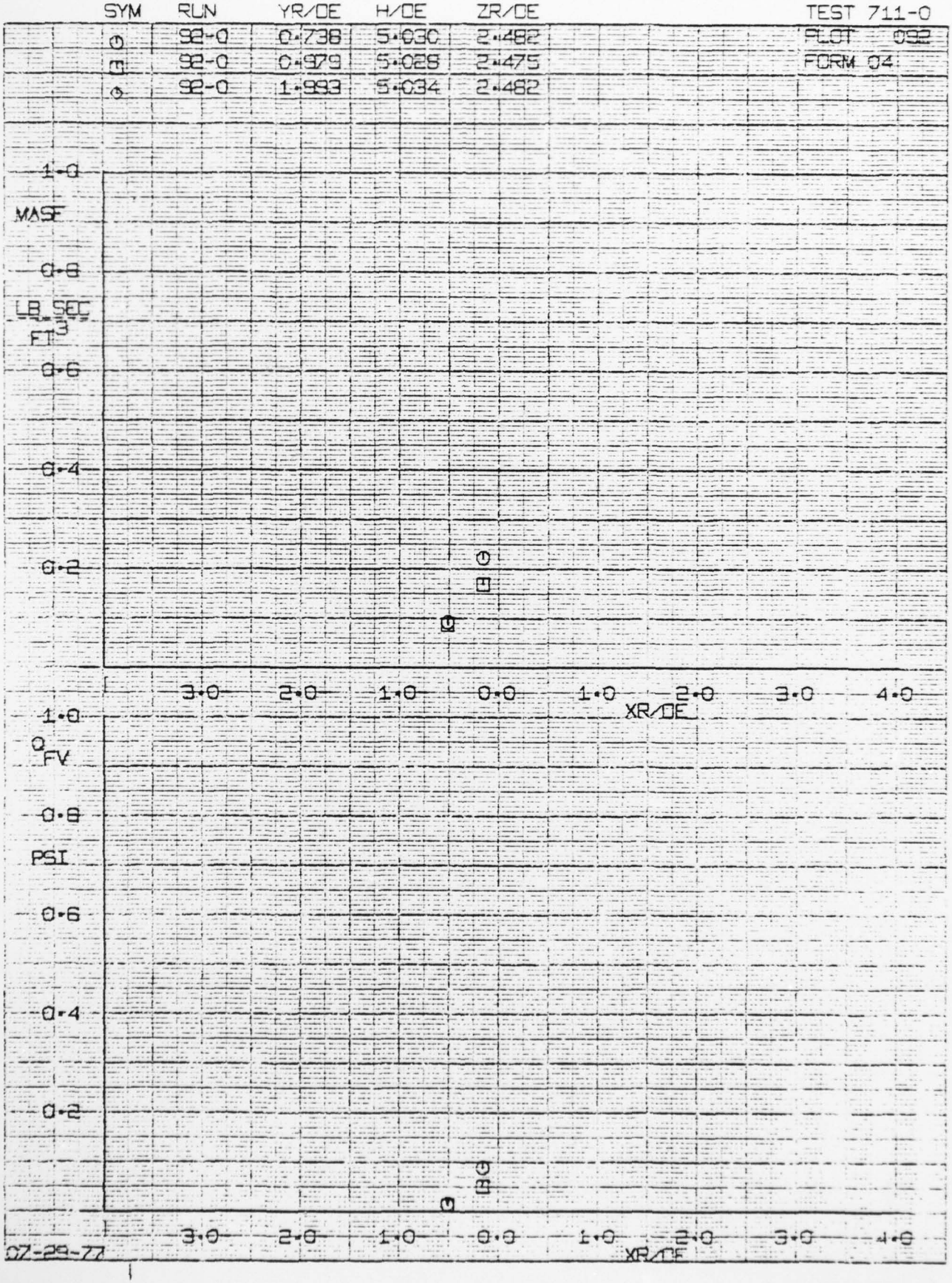
SYM	RUN	YR/DE	H/DE	ZR/DE
○	91-0	6.837	5.032	1.511
□	91-0	5.865	5.026	1.511
◇	91-0	4.823	5.028	1.504
△	91-0	3.816	5.032	1.504
▽	91-0	2.816	5.026	1.504
◁	91-0	1.773	5.025	1.496
◸	91-0	0.858	5.031	1.496



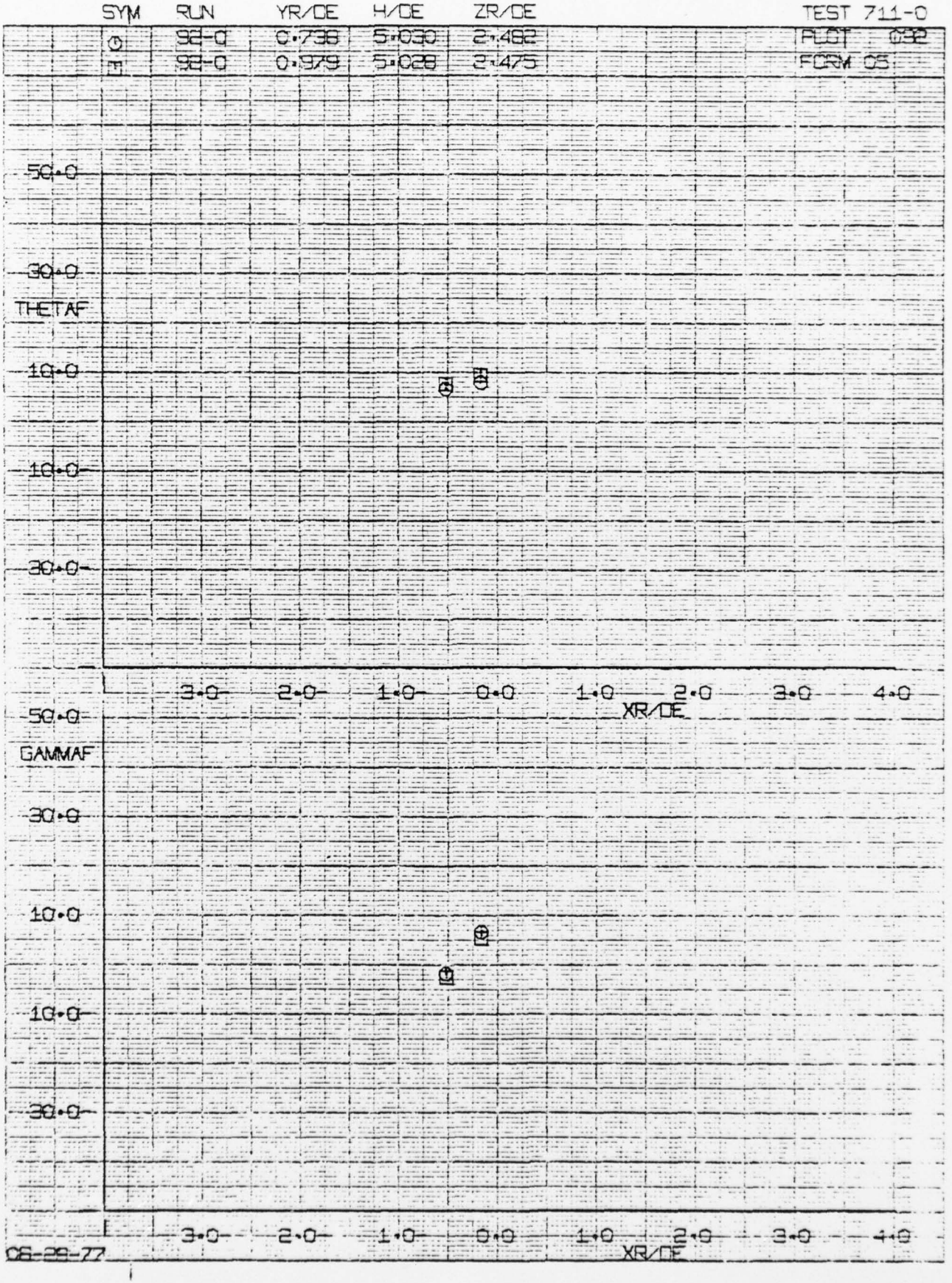
06-28-77

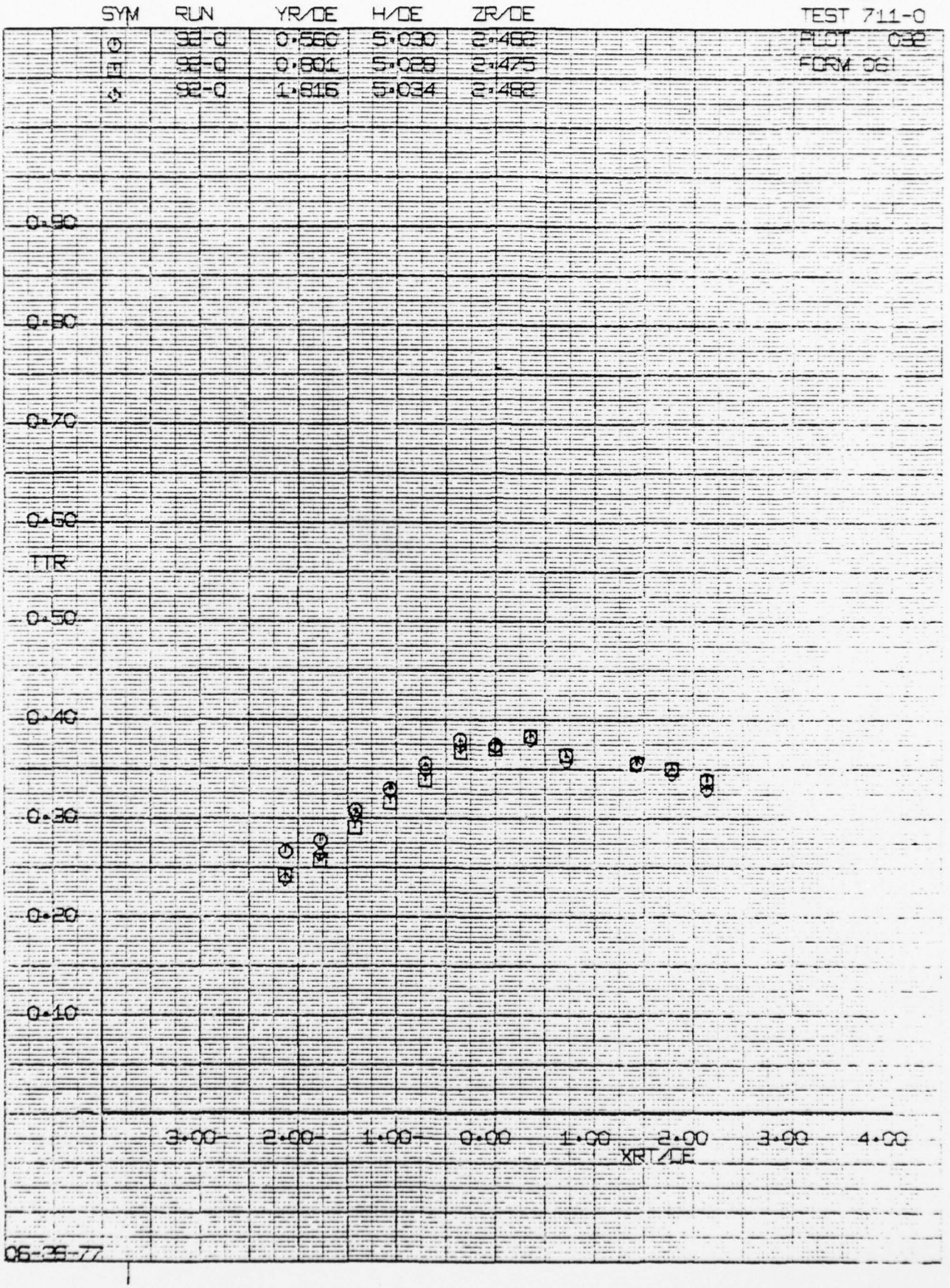
SYM	RUN	YR/DE	H/DE	ZR/DE
⊙	92-0	0.738	5.030	2.482
⊡	92-0	0.979	5.028	2.475
◇	92-0	1.993	5.034	2.482

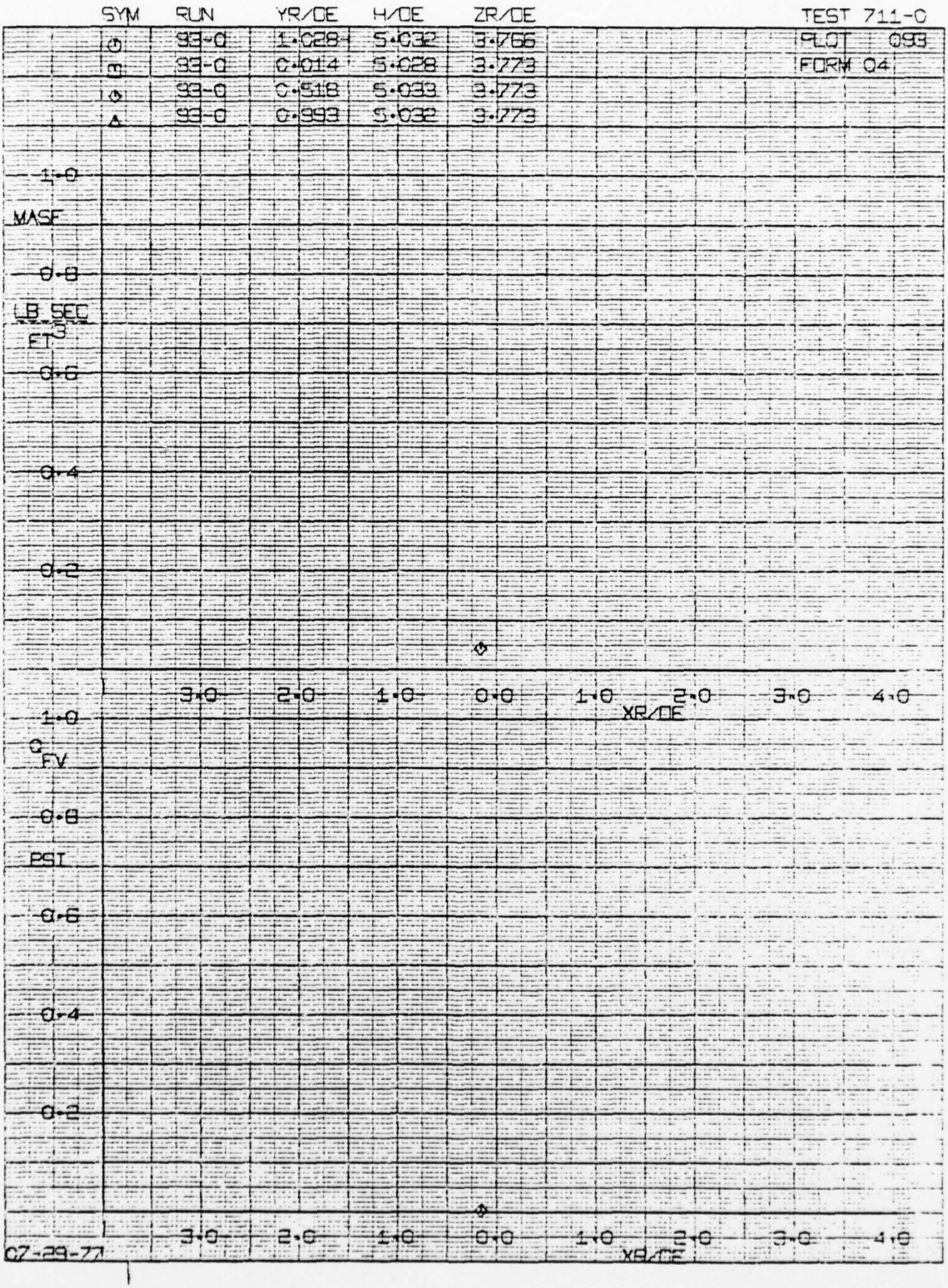
TEST 711-0
PLOT 092
FORM 04



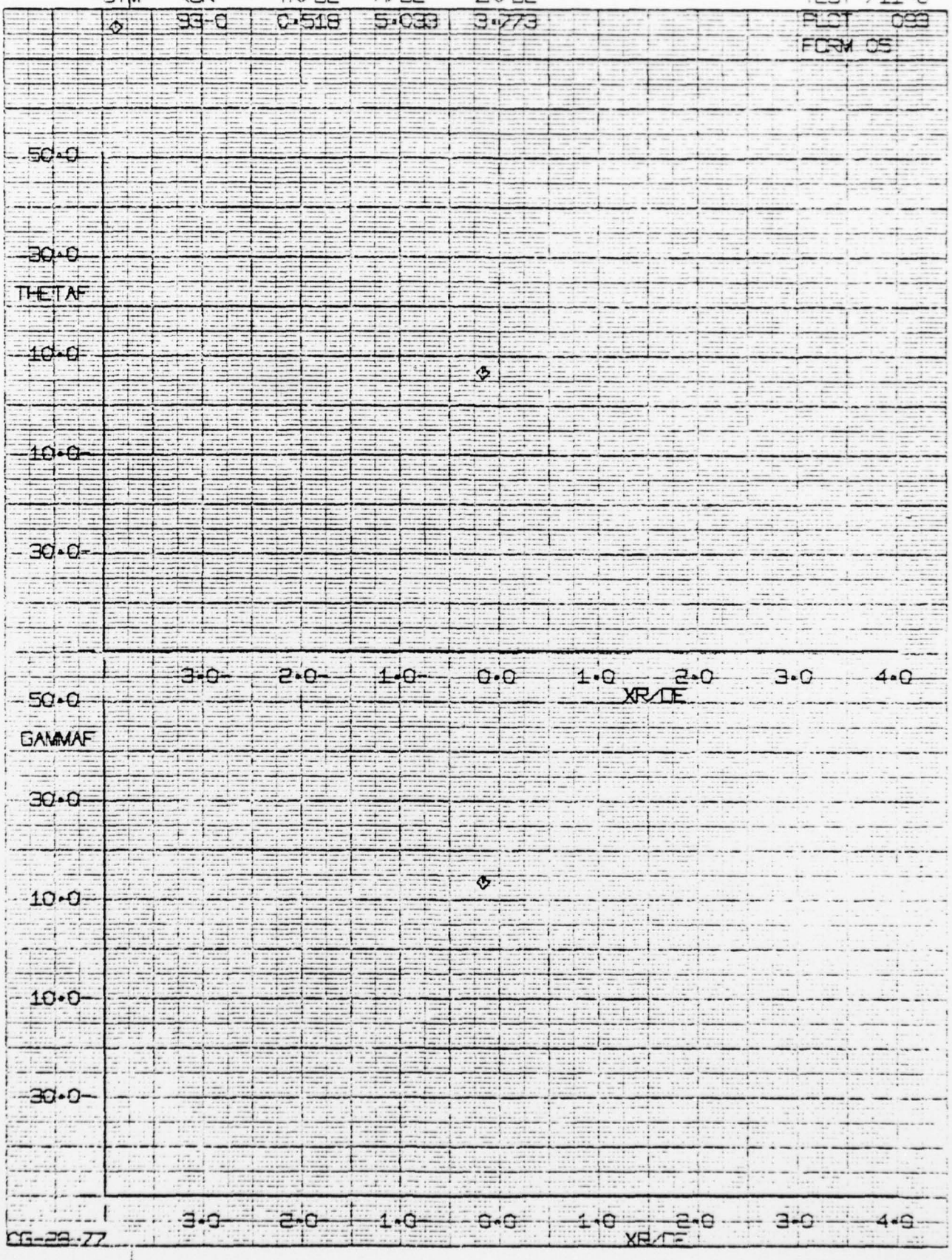
07-29-77


SYM RUN YR/DE H/DE ZR/DE TEST 711-0
92-0 0.738 5.030 2.482 PLOT 032
92-0 0.979 5.028 2.475 FORM 05
50.0
30.0
THETAF
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
50.0
GAMMAF
30.0
10.0
10.0
30.0
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
08-29-77

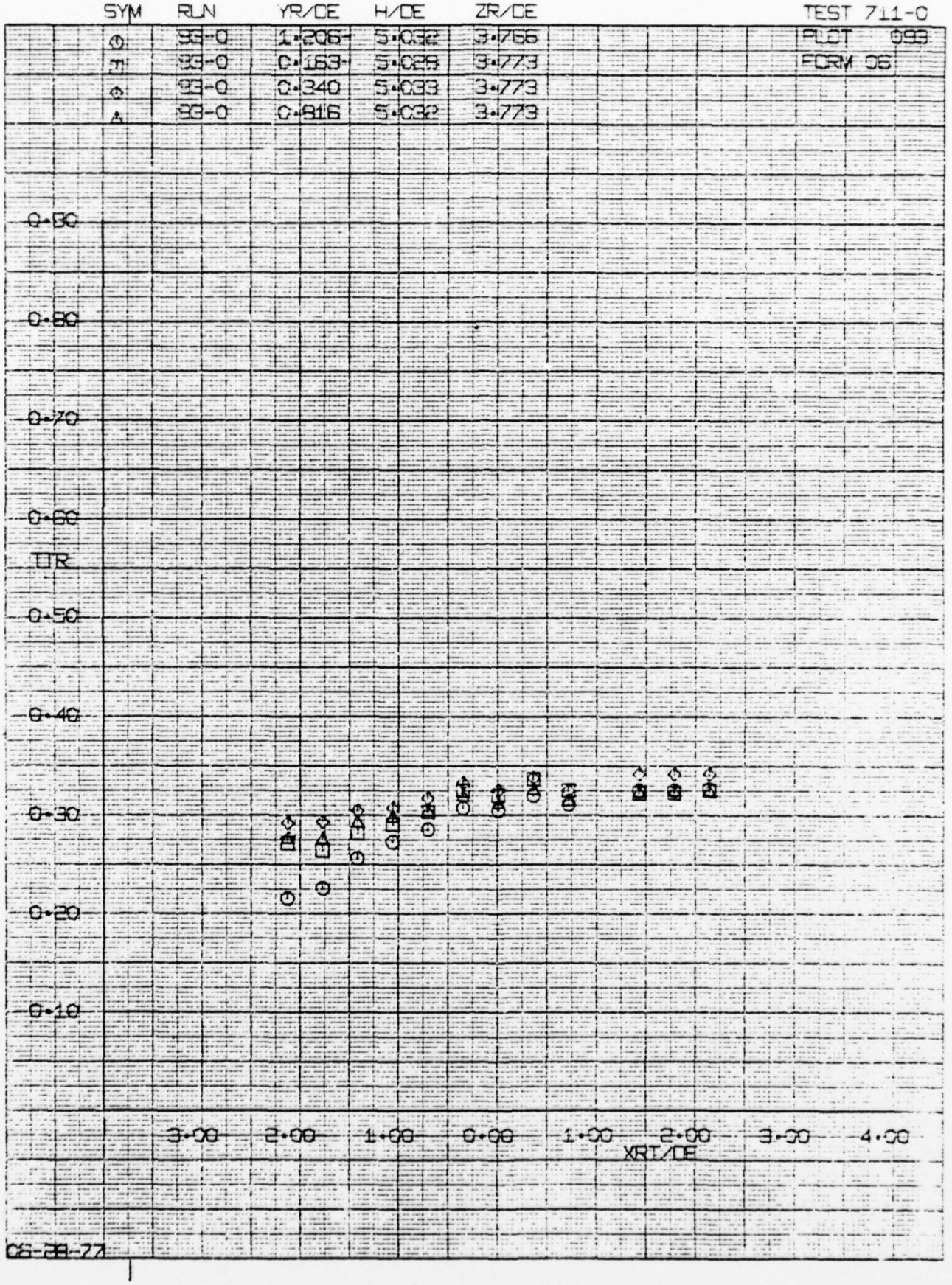

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 032
FORM 08
92-0 0.560 5.030 2.482
92-0 0.801 5.028 2.475
92-0 1.816 5.034 2.482
0.90
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00
2.00
1.00
0.00
1.00
2.00
3.00
4.00
XRT/DE
06-25-77

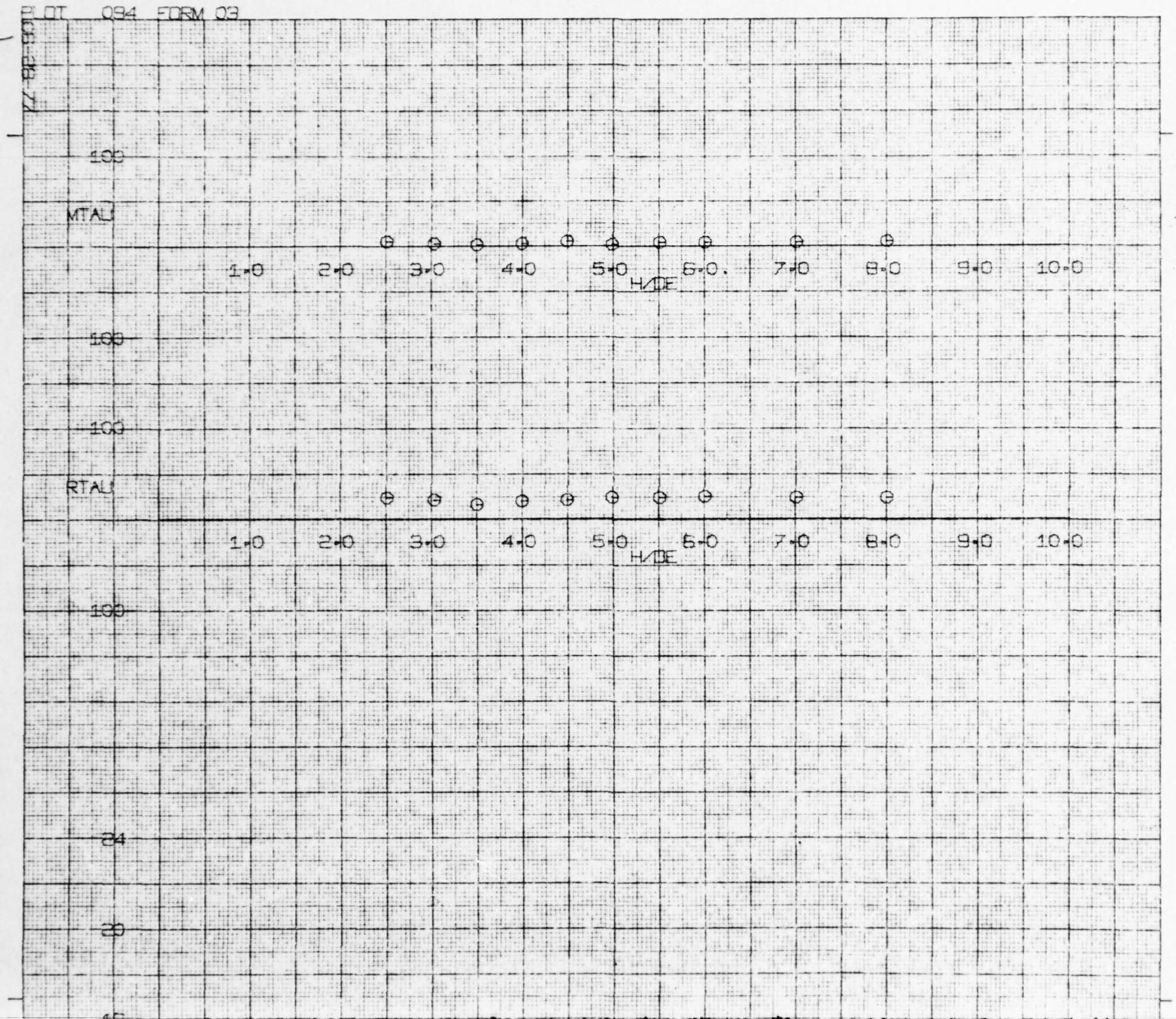

SYM RUN YR/DE H/DE ZR/DE
TEST 711-0
PLOT 093
FORM 04
93-0 1.028 5.032 3.766
93-0 0.014 5.028 3.773
93-0 0.518 5.033 3.773
93-0 0.993 5.032 3.773
1.0
MASF
0.8
LB SEC
FT3
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XR/DE
1.0
QFV
0.8
PSI
0.6
0.4
0.2
3.0 2.0 1.0 0.0 1.0 2.0 3.0 4.0
XB/DE
07-29-77

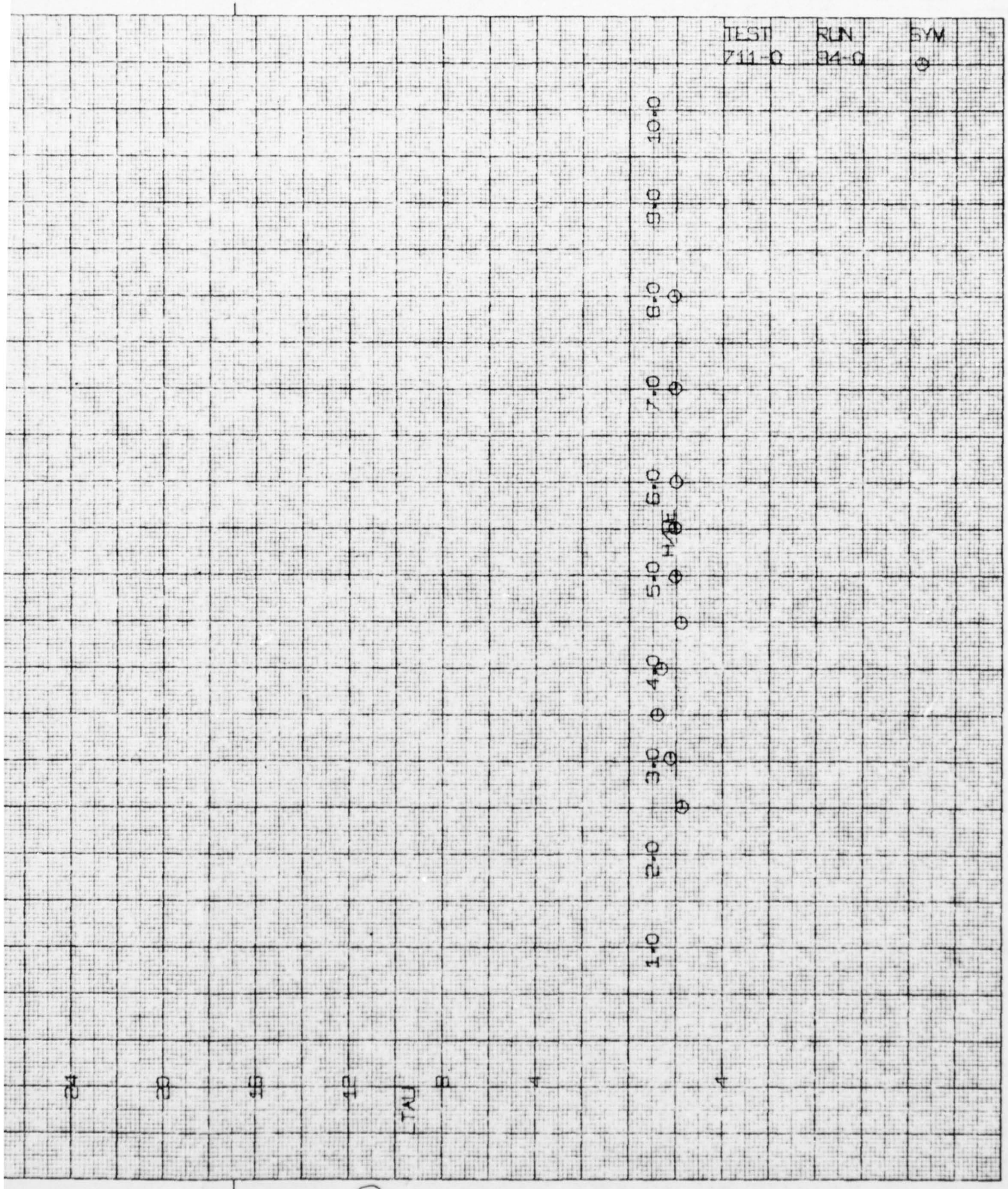
SYM	RUN	YR/DE	H/DE	ZR/DE	TEST 711-C
◇	33-0	0.518	5.033	3.773	PLOT 093
					FORM 05

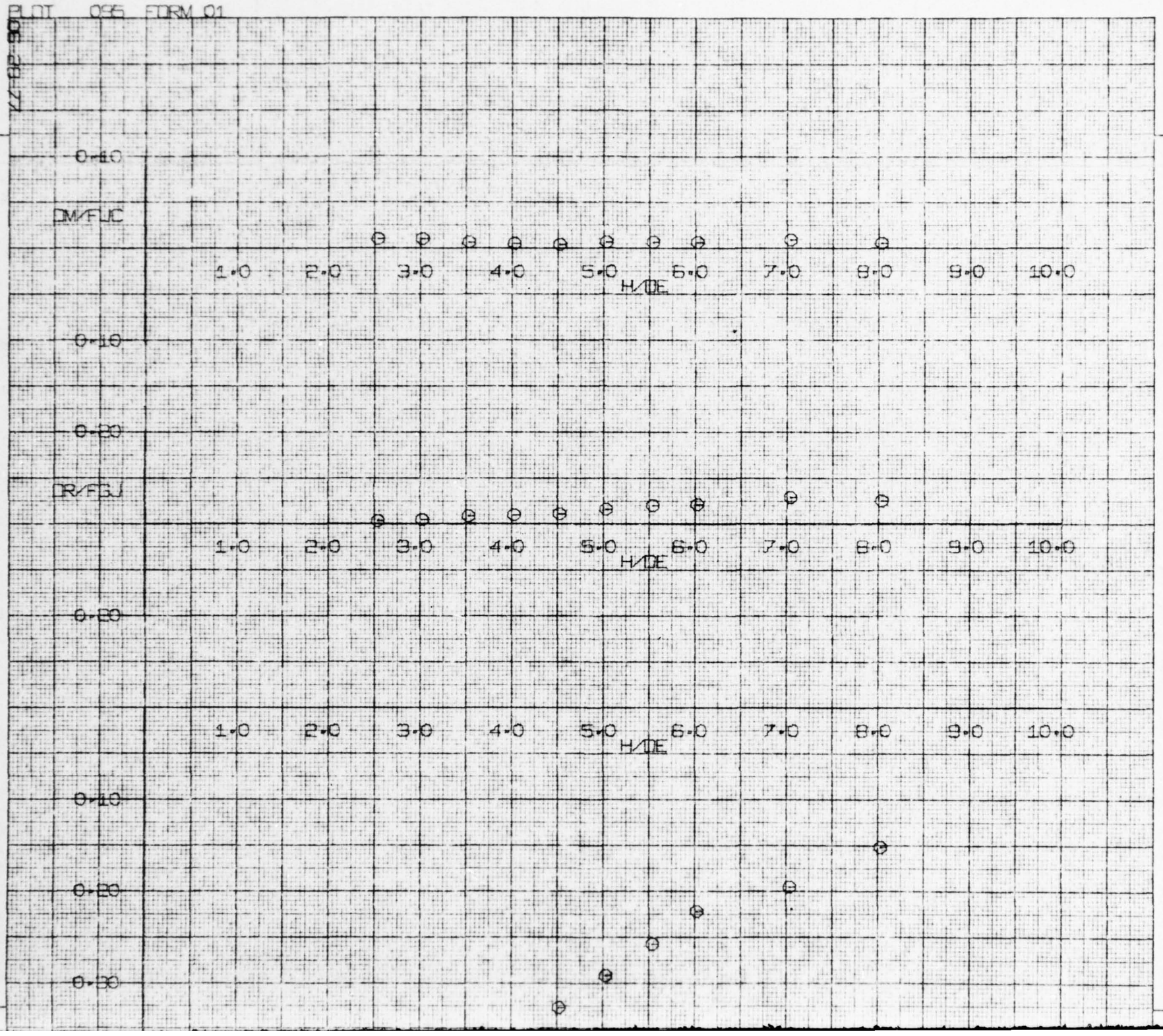


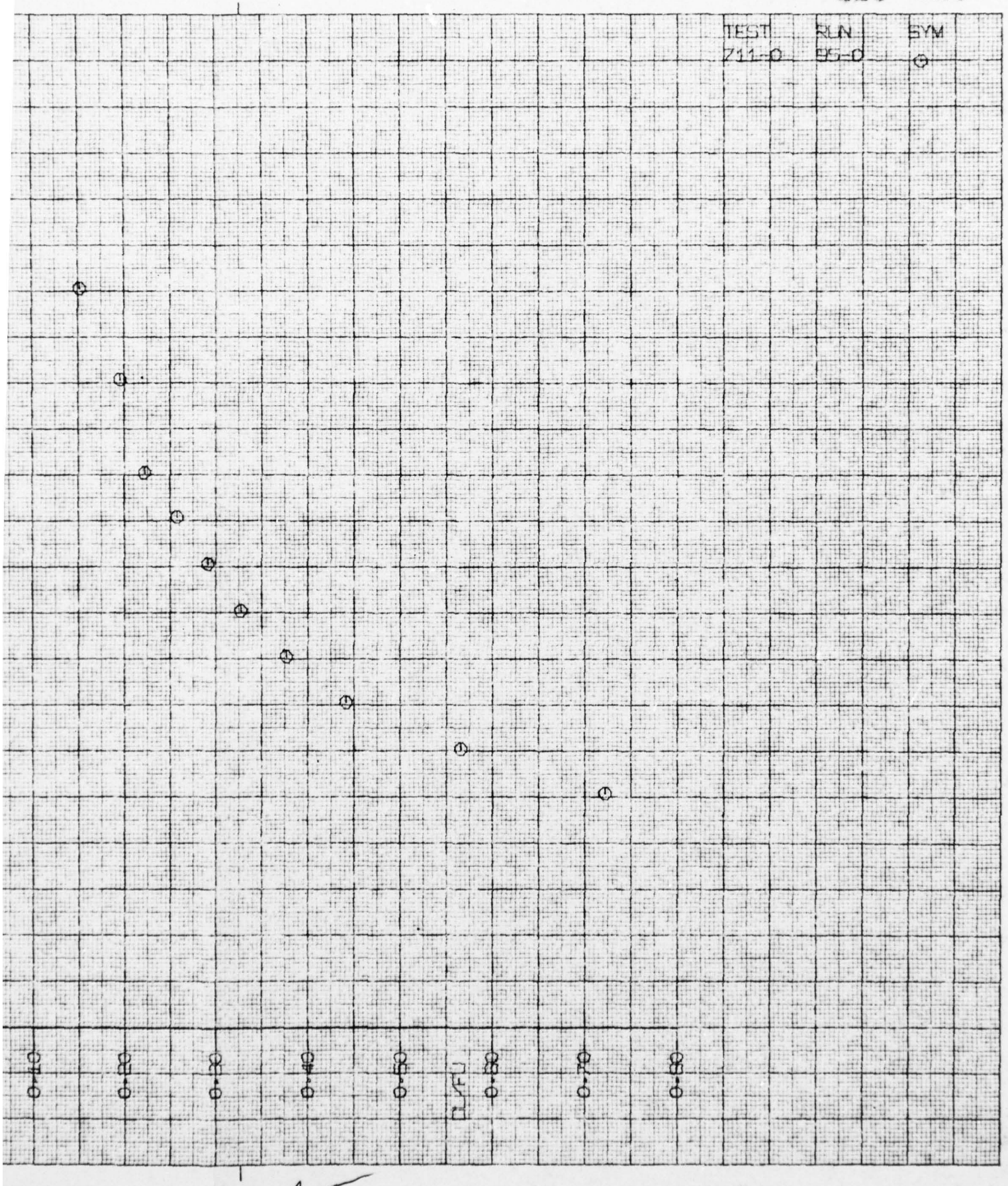
CG-28.77

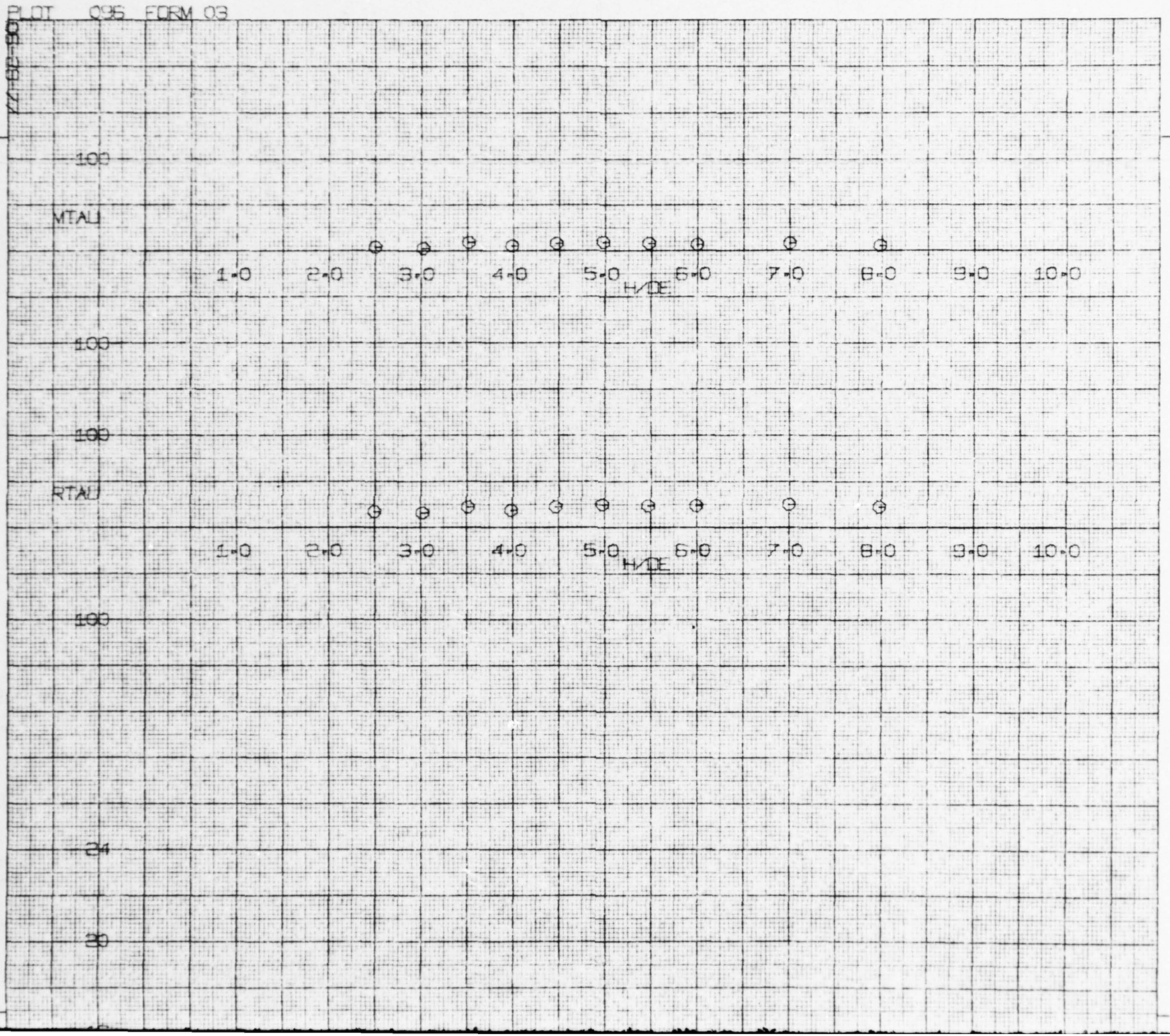

SYM RUN YR/DE H/DE ZR/DE
93-0 1.206 5.032 3.766
93-0 0.163 5.029 3.773
93-0 0.340 5.033 3.773
93-0 0.816 5.032 3.773
TEST 711-0
PLOT 093
FORM 06
0.80
0.70
0.60
TTR
0.50
0.40
0.30
0.20
0.10
3.00 2.00 1.00 0.00 1.00 2.00 3.00 4.00
XRT/DE
06-28-77


PLOT 084 FORM 03
MTAU
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
RTAU
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE

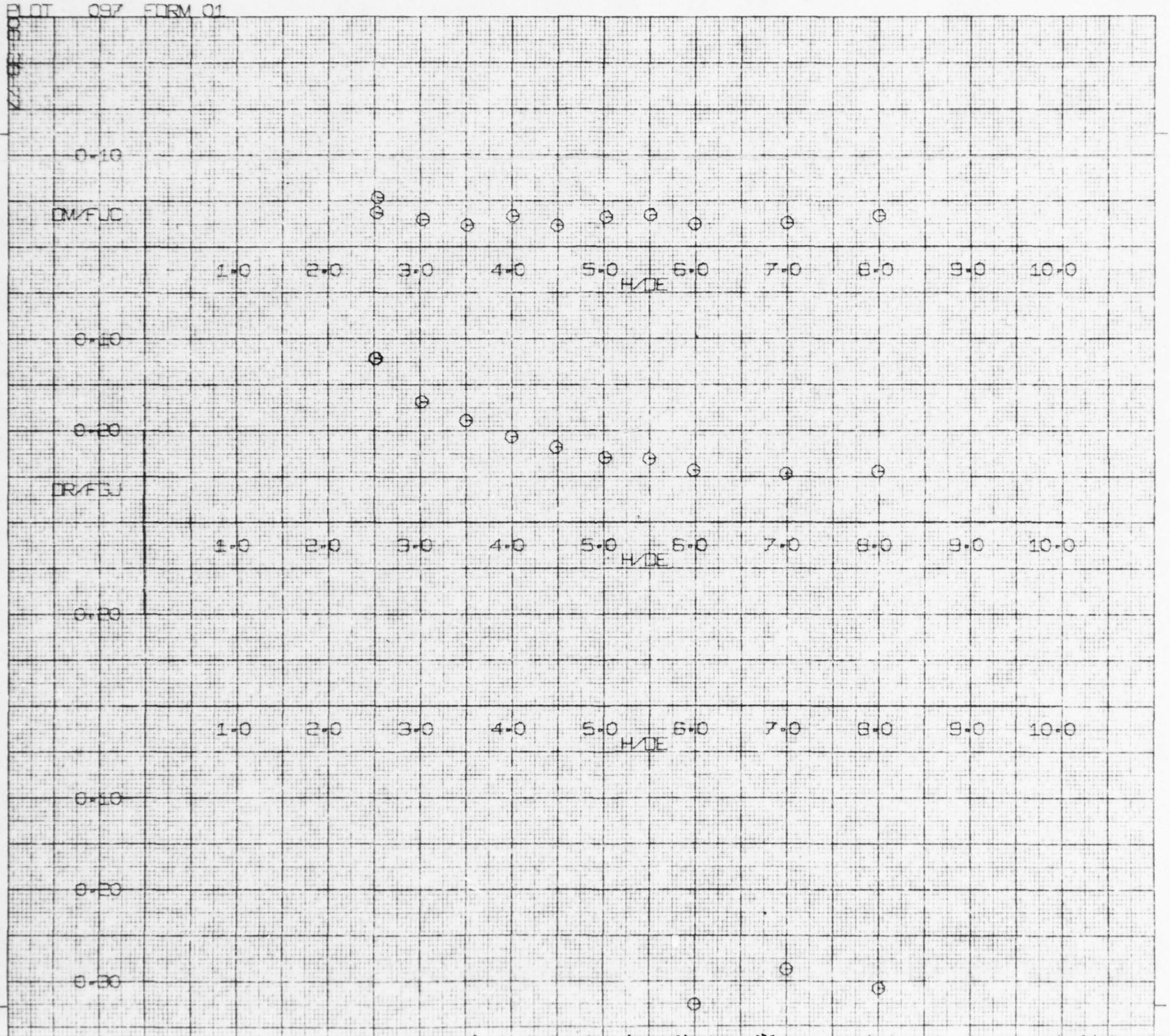

TEST
711-0
RUN
84-0
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
H/DE
TAU
B
4
4
48
42
36
30
24

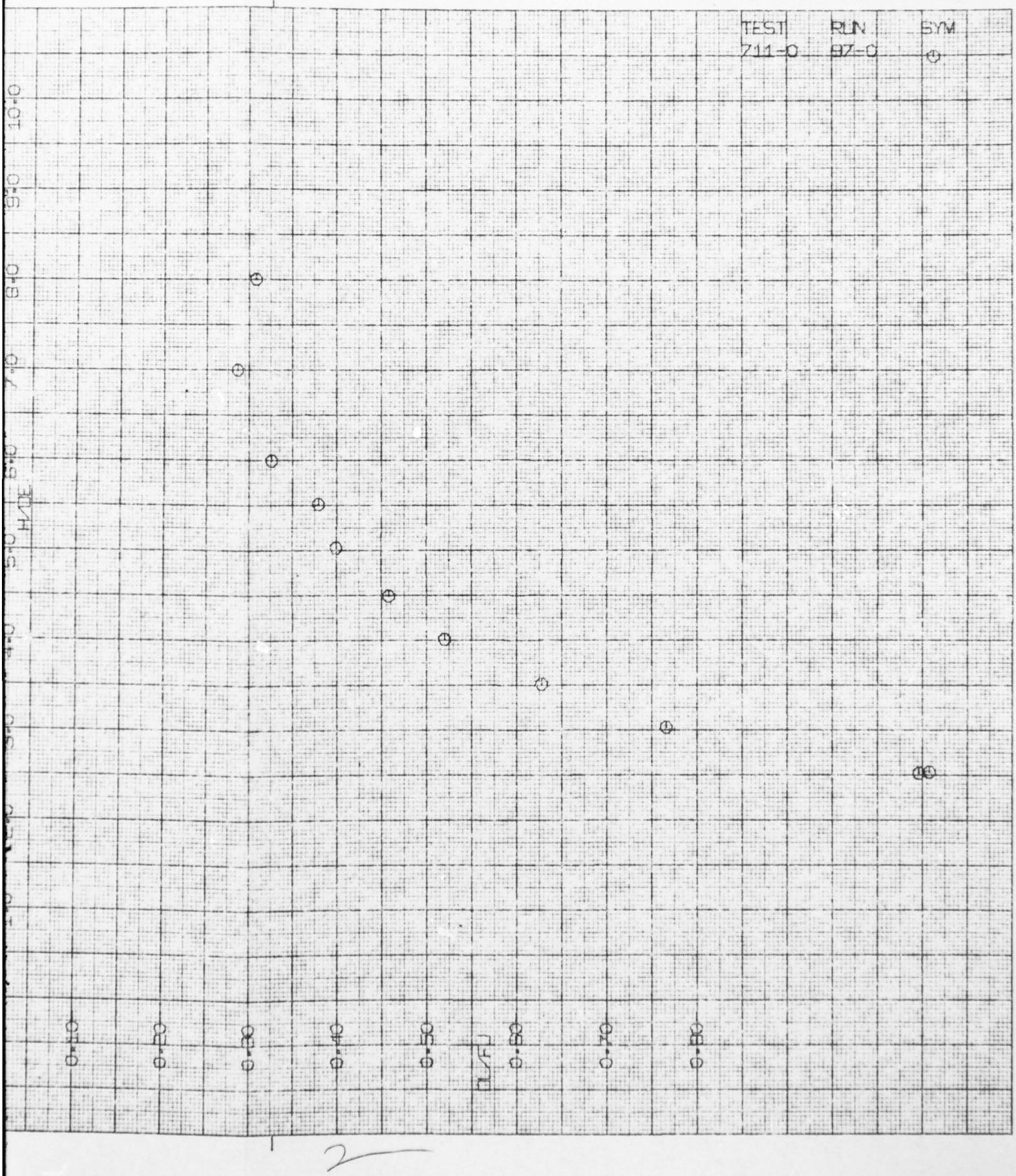

PLOT 056 FORM 01
77-02-30
0.10
DM/FUC
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
DR/FGJ
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
0.30

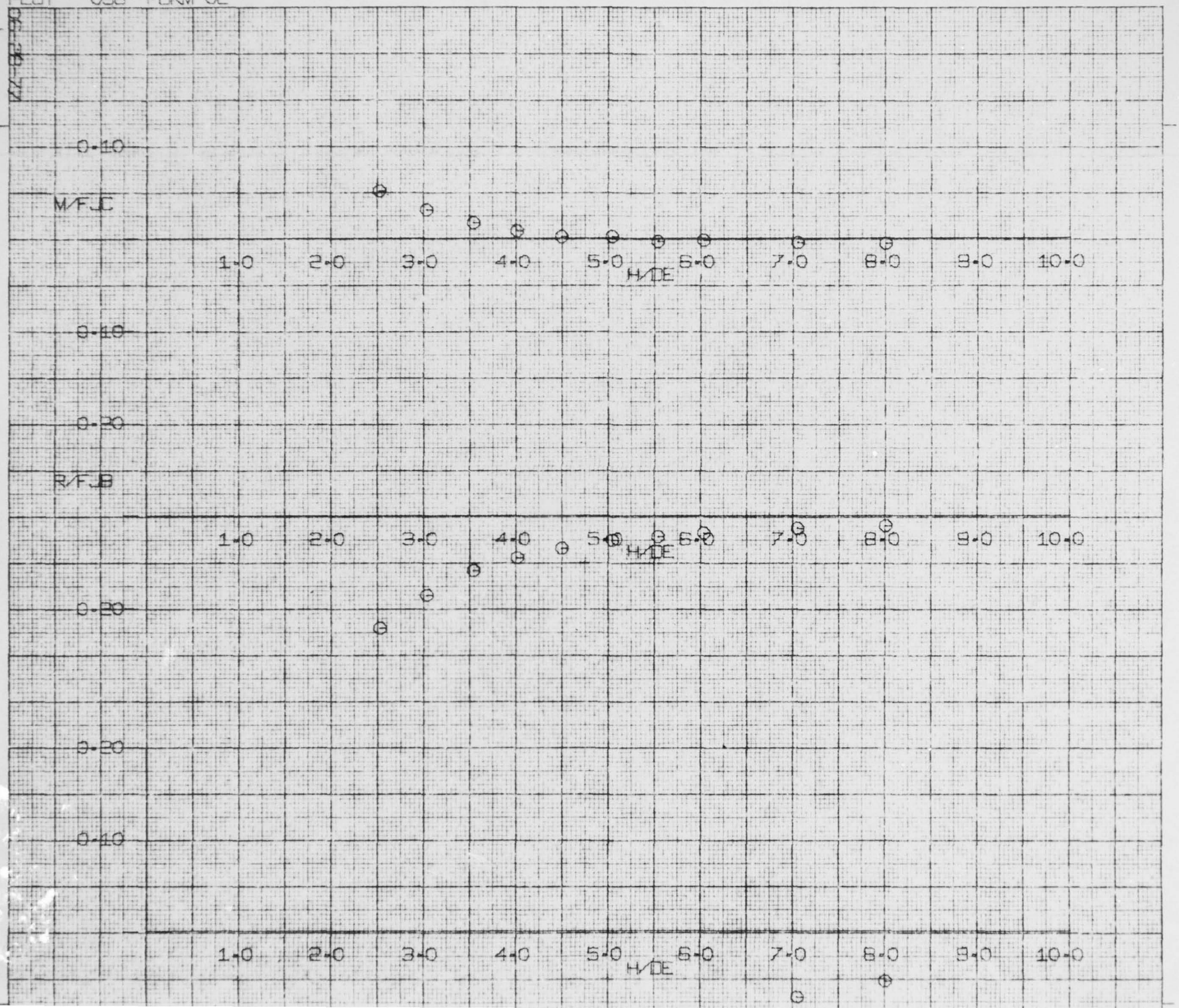

TEST
711-0
RUN
95-0
SYM

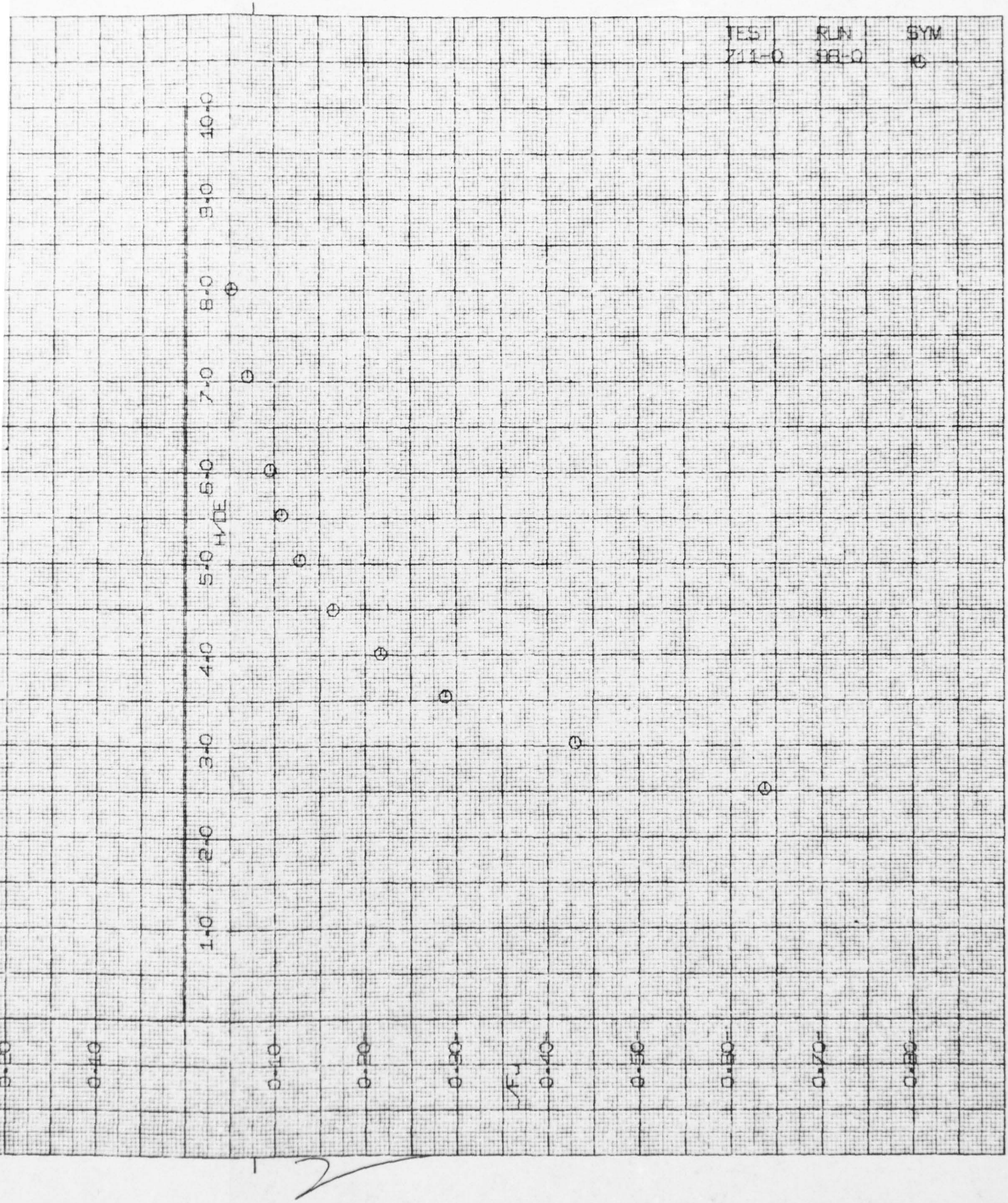

PLOT 035 FORM 03
ZT-BE-90
100
MTAU
1.0
2.0
3.0
4.0
5.0
H/DE
6.0
7.0
8.0
9.0
10.0
100
100
RTAU
1.0
2.0
3.0
4.0
5.0
H/DE
6.0
7.0
8.0
9.0
10.0
100
24
20

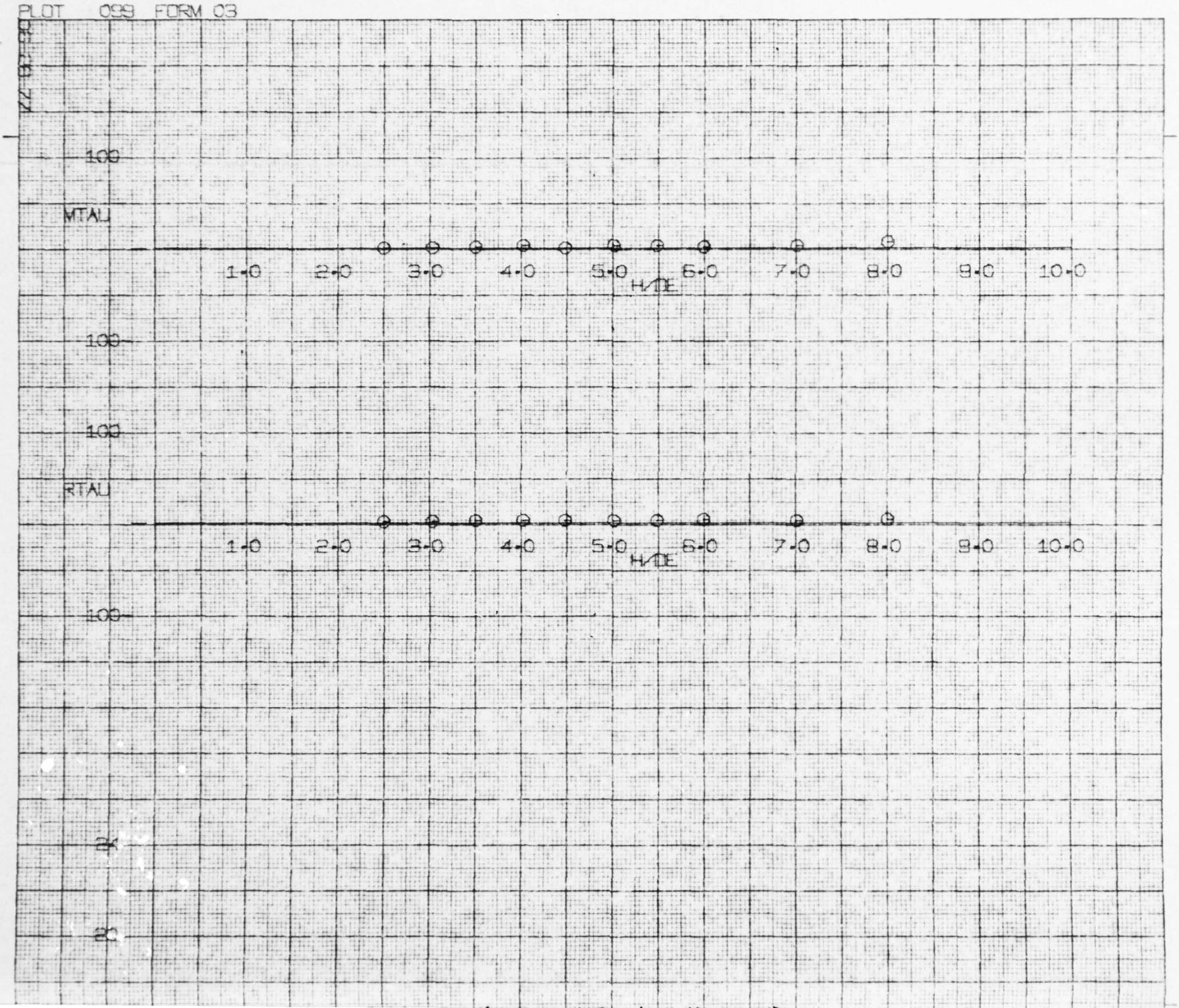
TEST
Z11-0
RUN
38-02
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
HYDE
TAIL

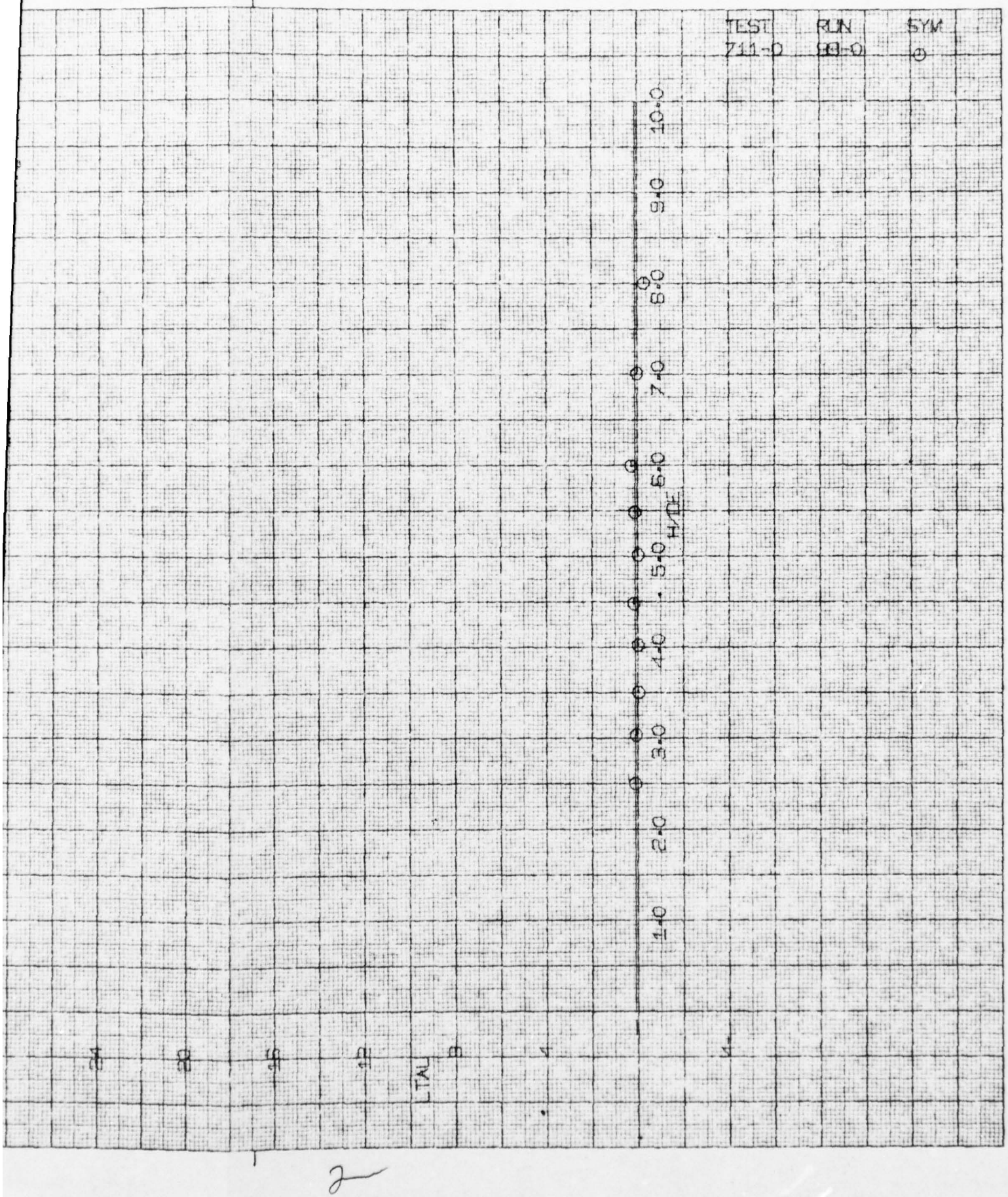

PLOT 097 FORM 01
0.10
DM/FUC
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
DR/FGJ
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.20
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
H/DE
0.10
0.20
0.30

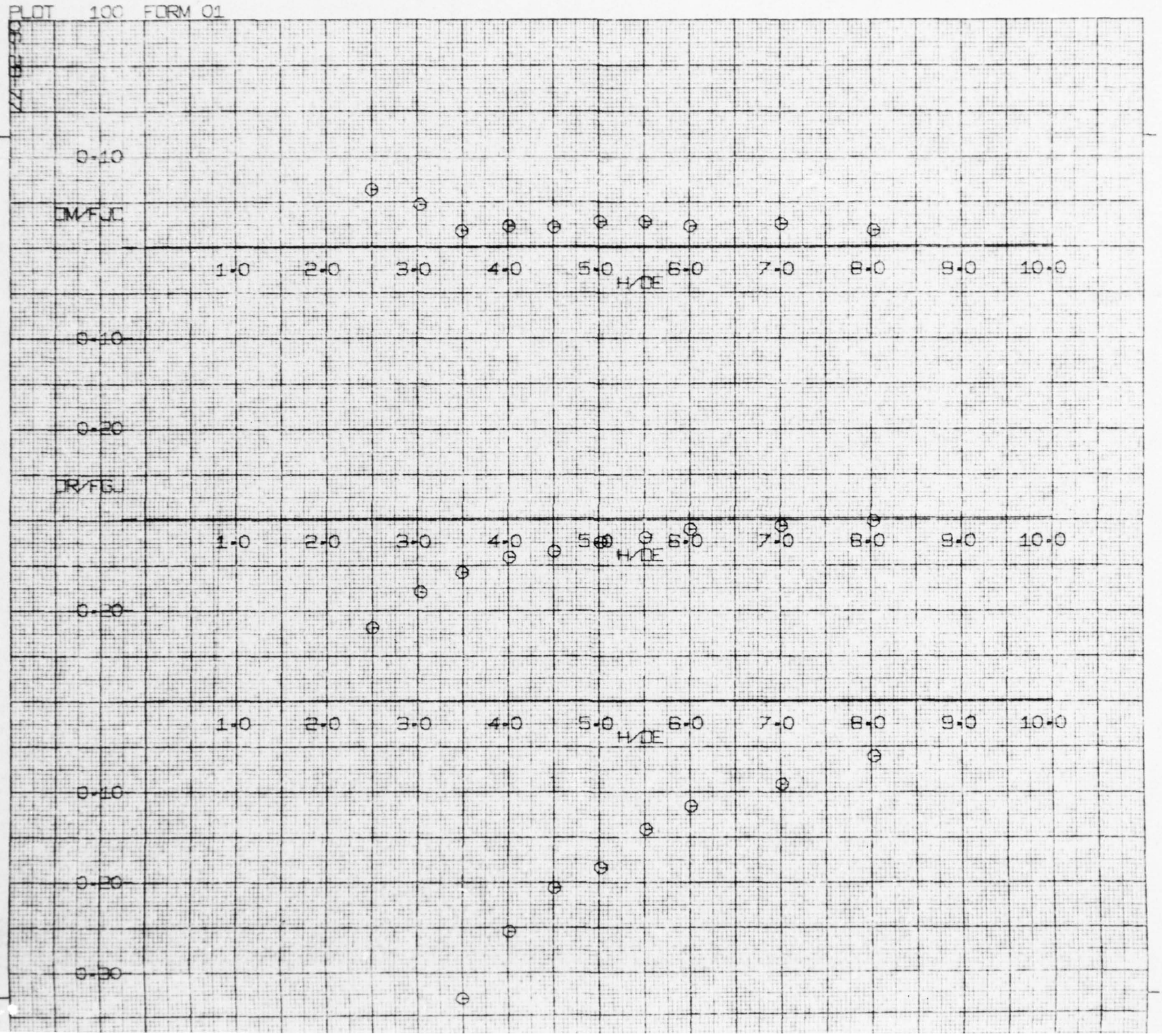

TEST
711-0
RUN
87-0
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
DEPTH
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
FLUID

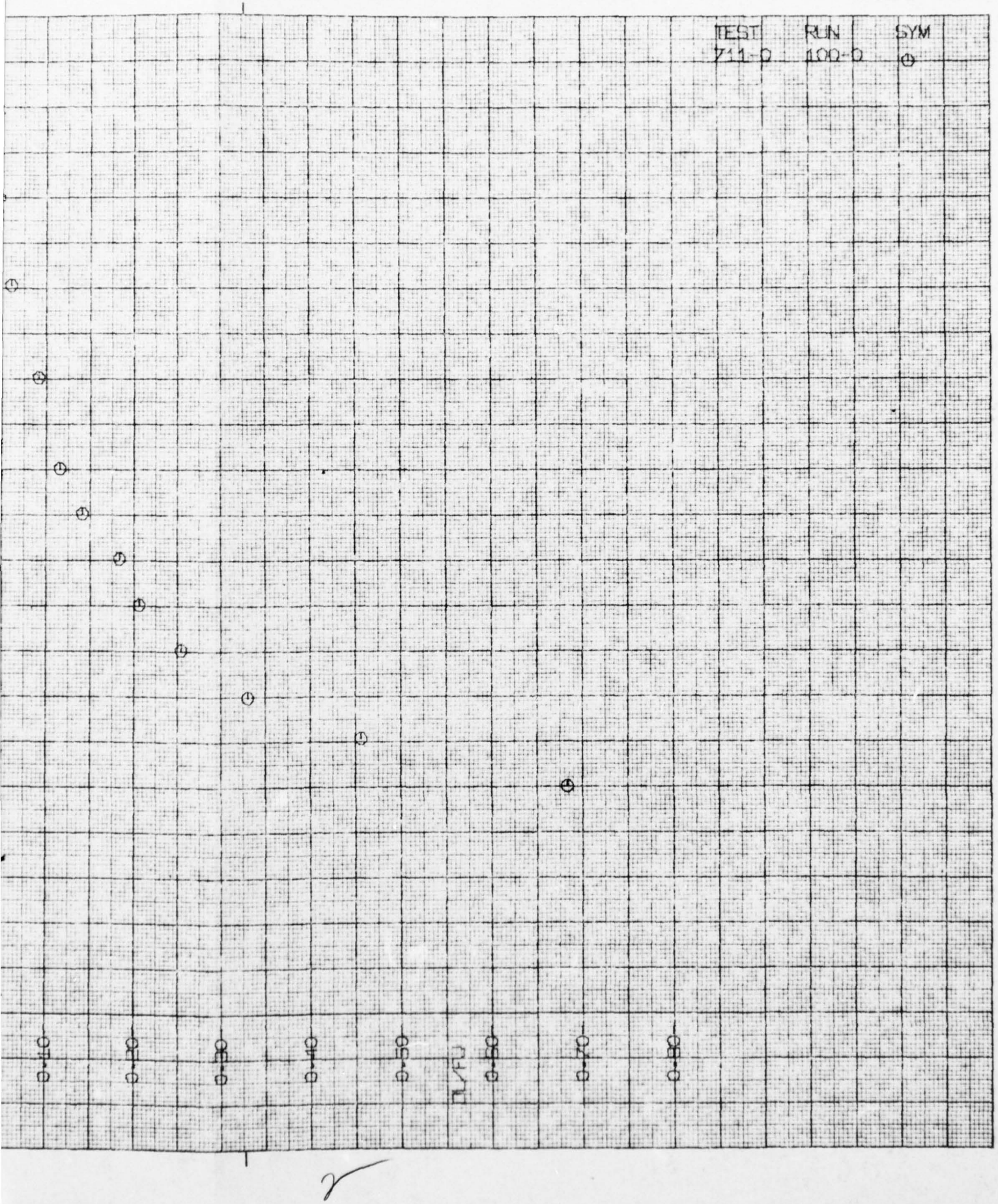

PLOT 098 FORM 02
0-10
M/F JC
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
0-10
0-20
R/F JB
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
0-20
0-20
0-10
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE

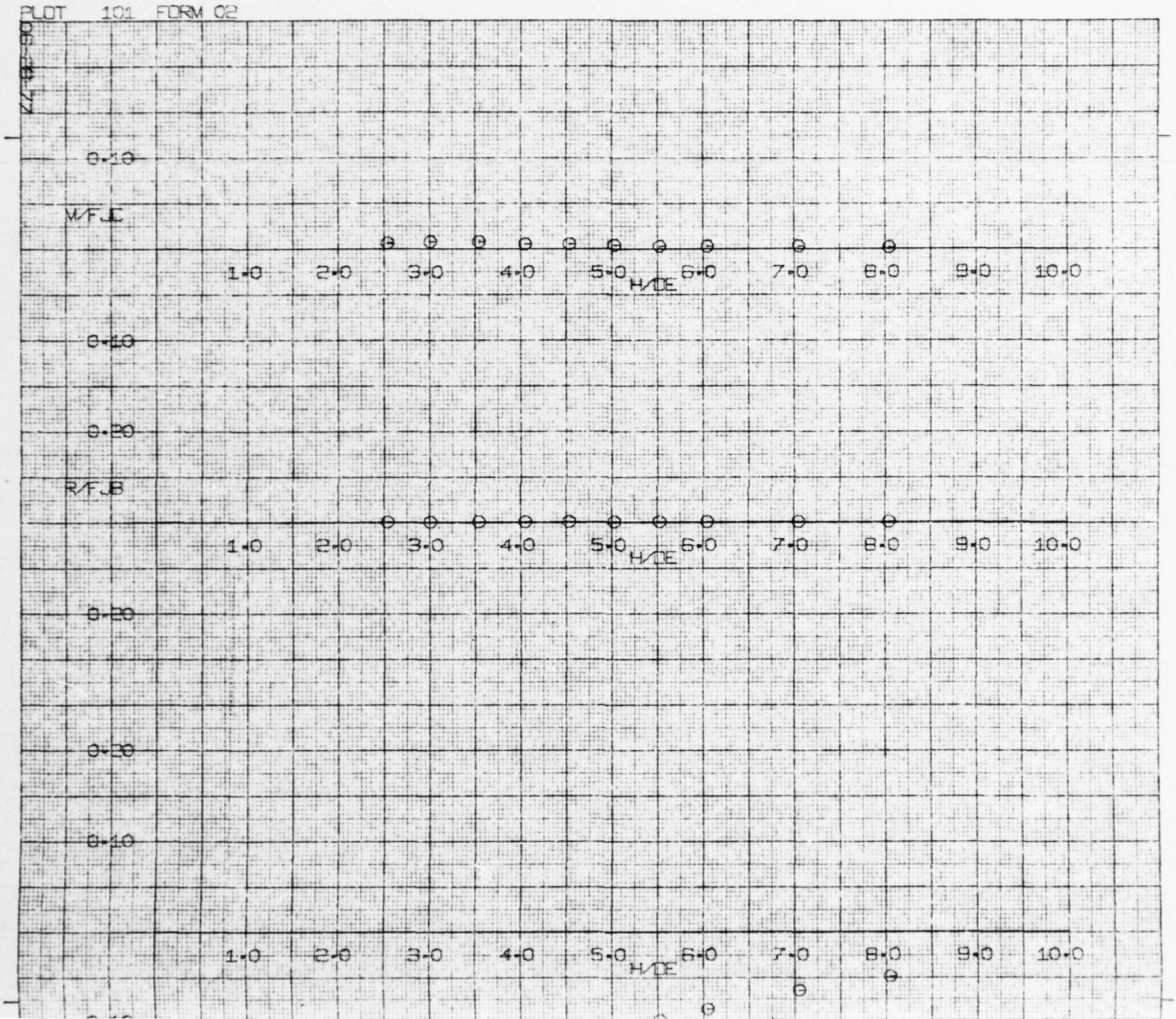

TEST
Z11-0
RUN
58-0
SYM
10-0
9-0
8-0
7-0
6-0
5-0
4-0
3-0
2-0
1-0
MACH NO.

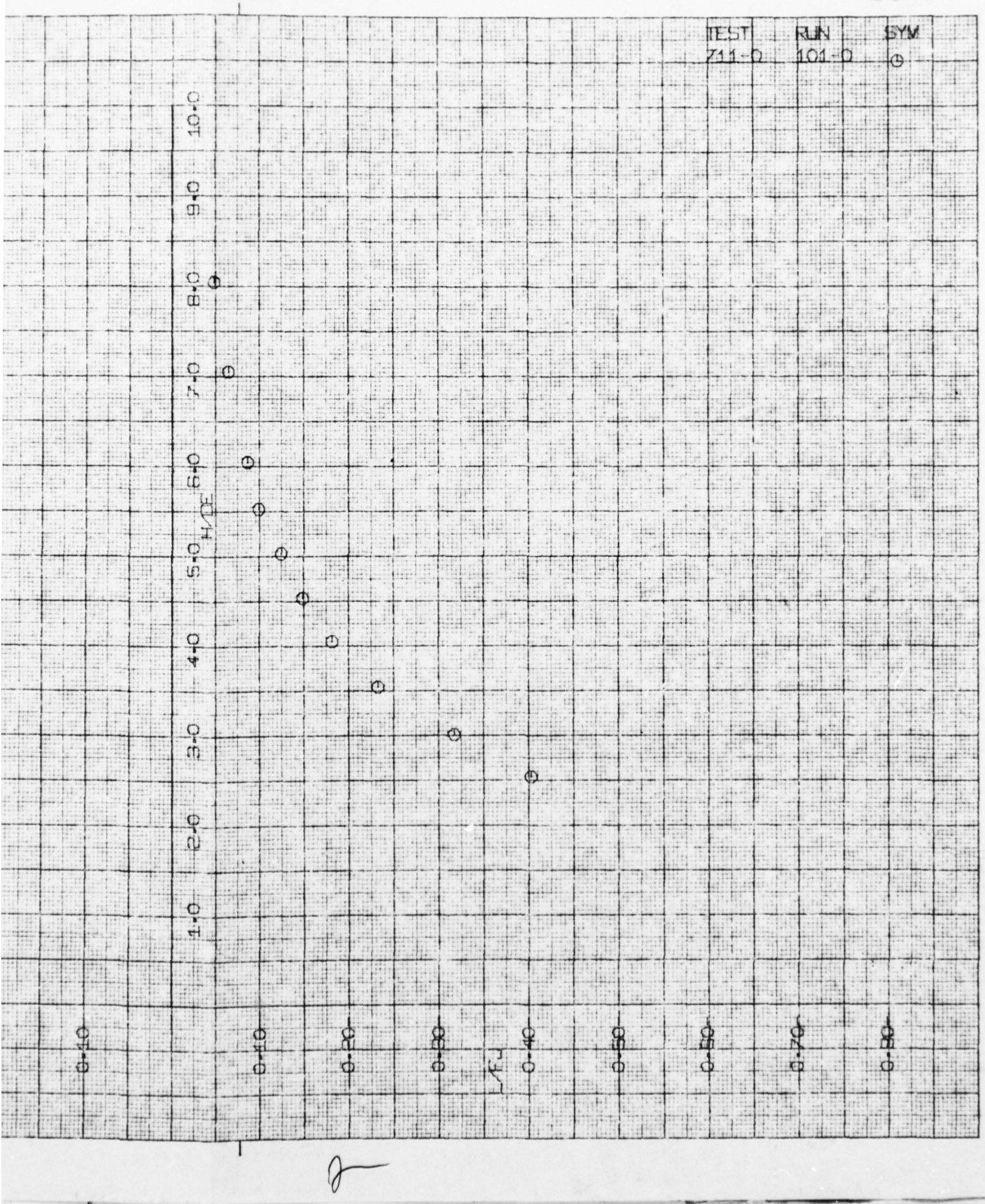

PLOT 099 FORM 03
100
MTAU
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
100
RTAU
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
100
2K
20

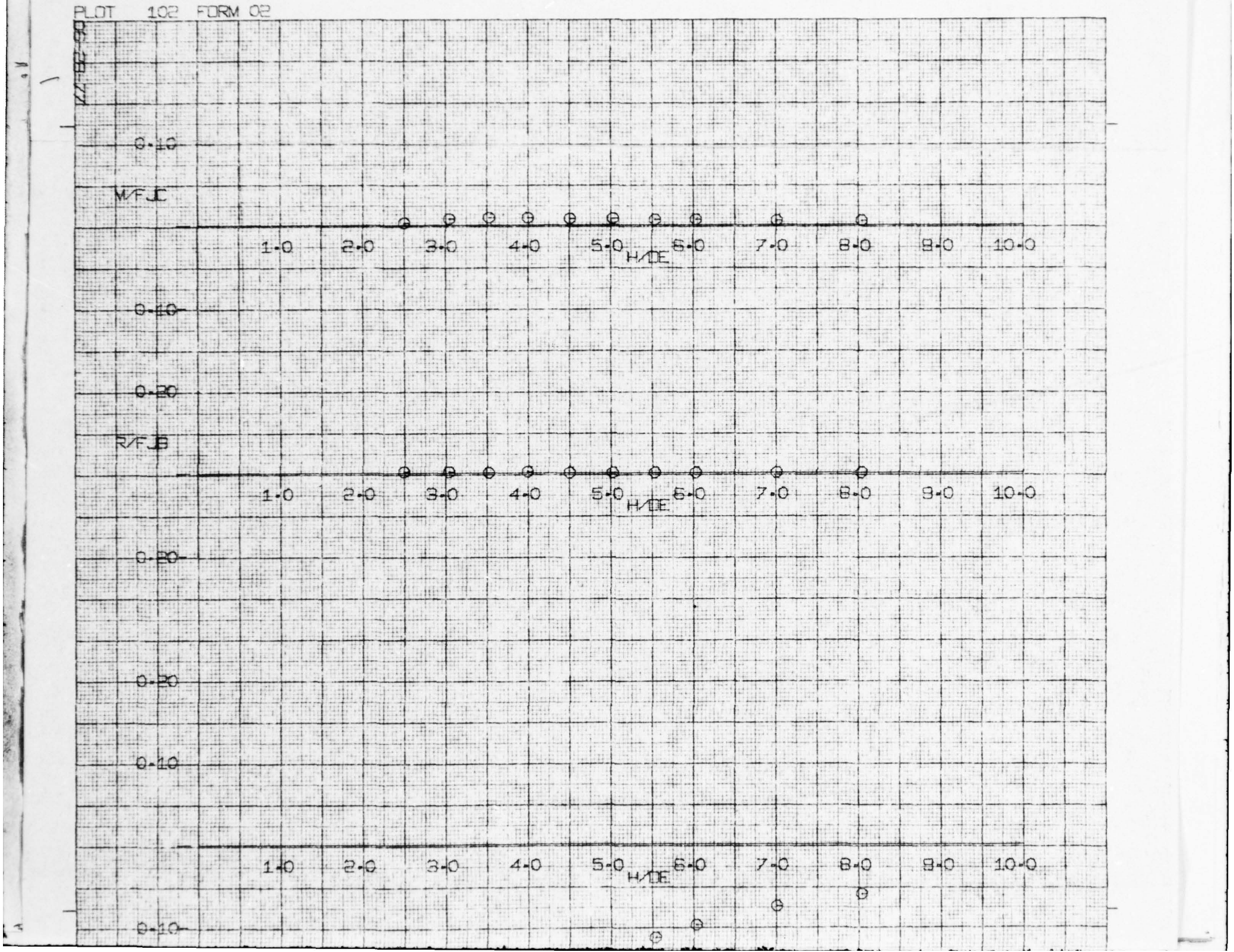

TEST
711-0
RUN
88-0
SYM
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
H/DE
LTAU
B
4
2
1
4

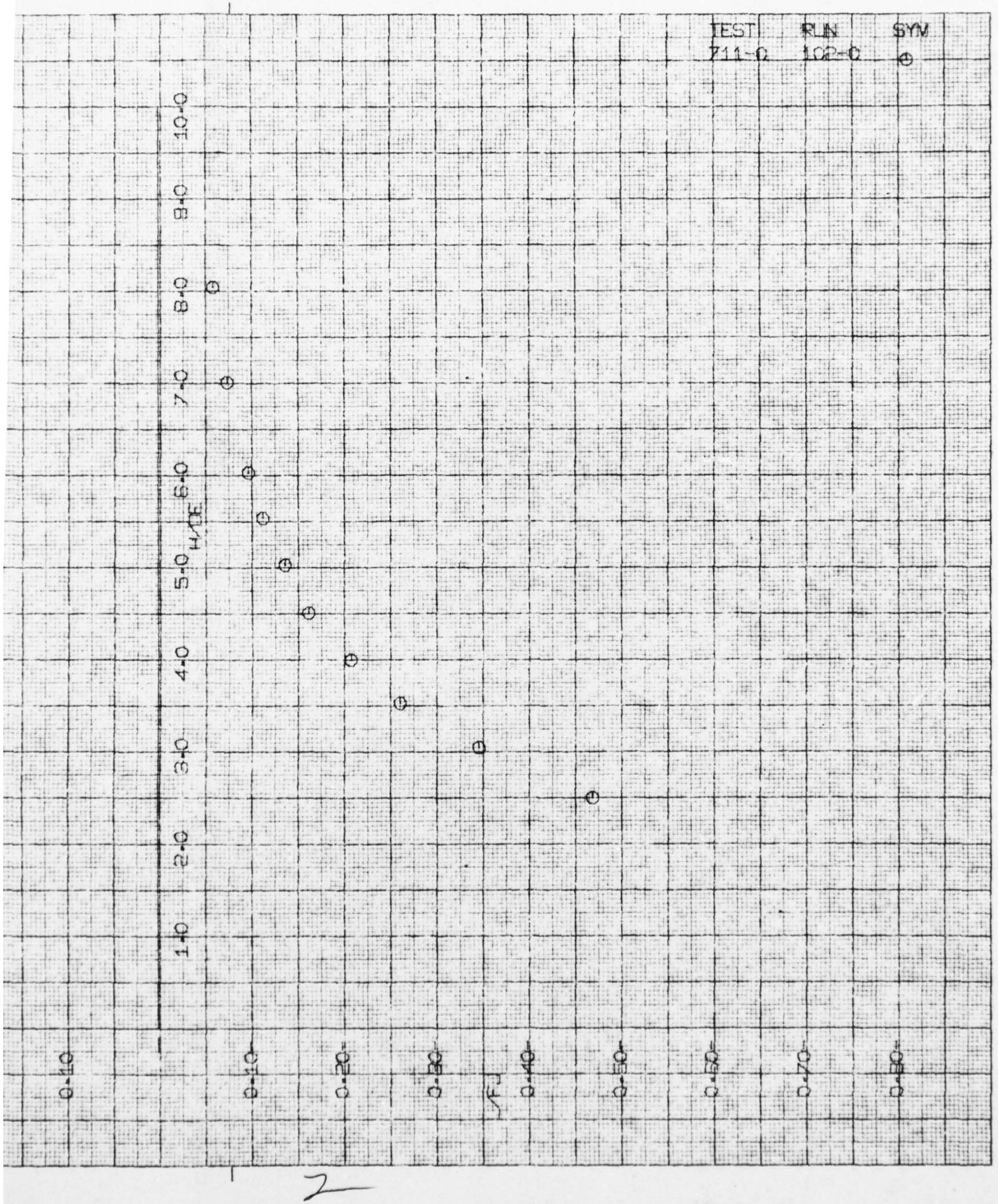

PLOT 100 FORM 01
0-10
DM/FJC
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
0-10
0-20
DR/FGJ
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
0-20
1-0
2-0
3-0
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6-0
7-0
8-0
9-0
10-0
H/DE
0-10
0-20
0-30

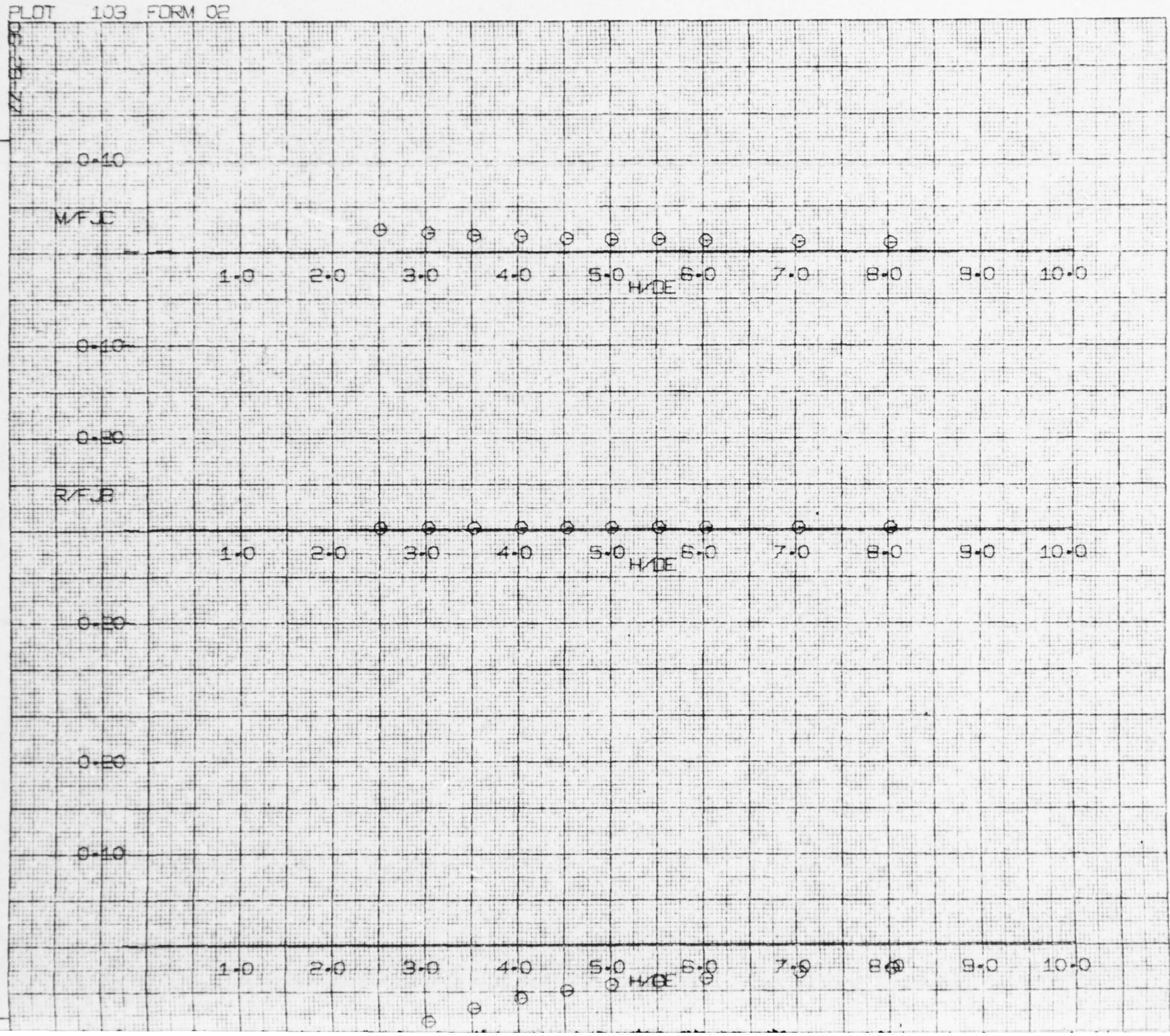

TEST
711-0
RUN
100-0
SYM
CL/CU

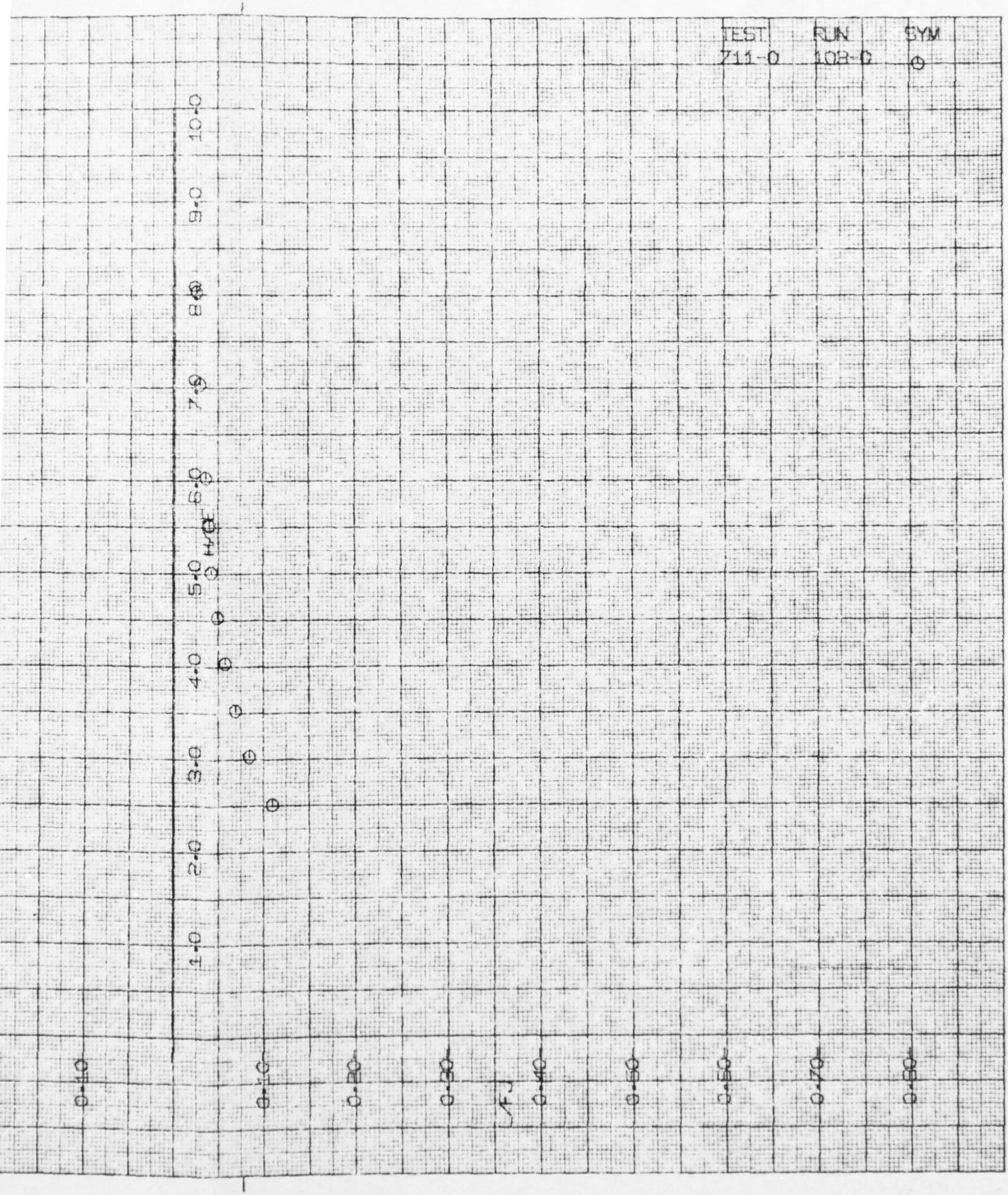

PLOT 101 FORM 02
0·10
M/F JC
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·10
0·20
R/F JB
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·20
0·20
0·10
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0

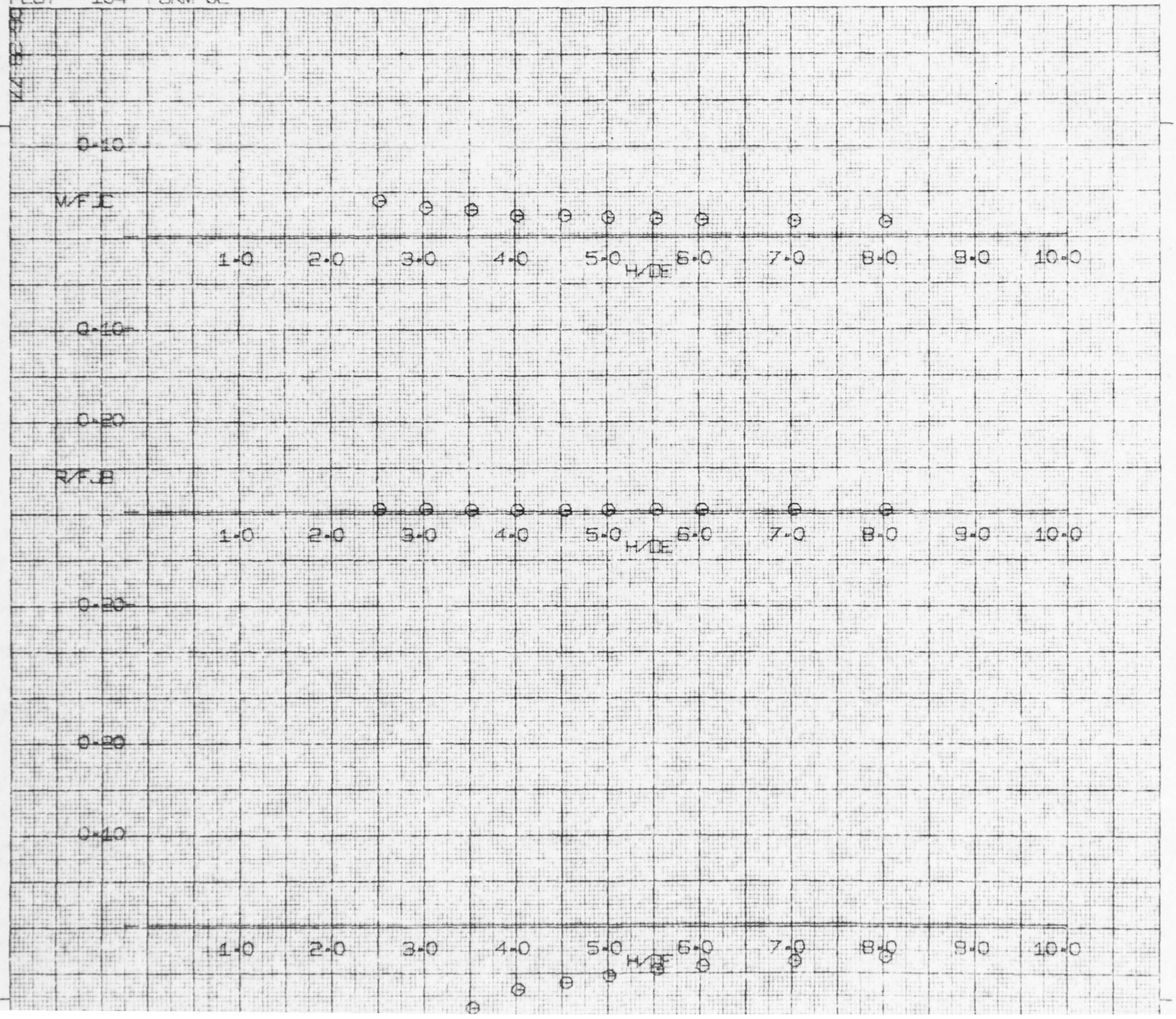

TEST RUN SYM
Z11-0 101-0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
H/DE
Φ-10
Φ-10
Φ-20
Φ-30
L/E
Φ-40
Φ-50
Φ-60
Φ-70
Φ-80

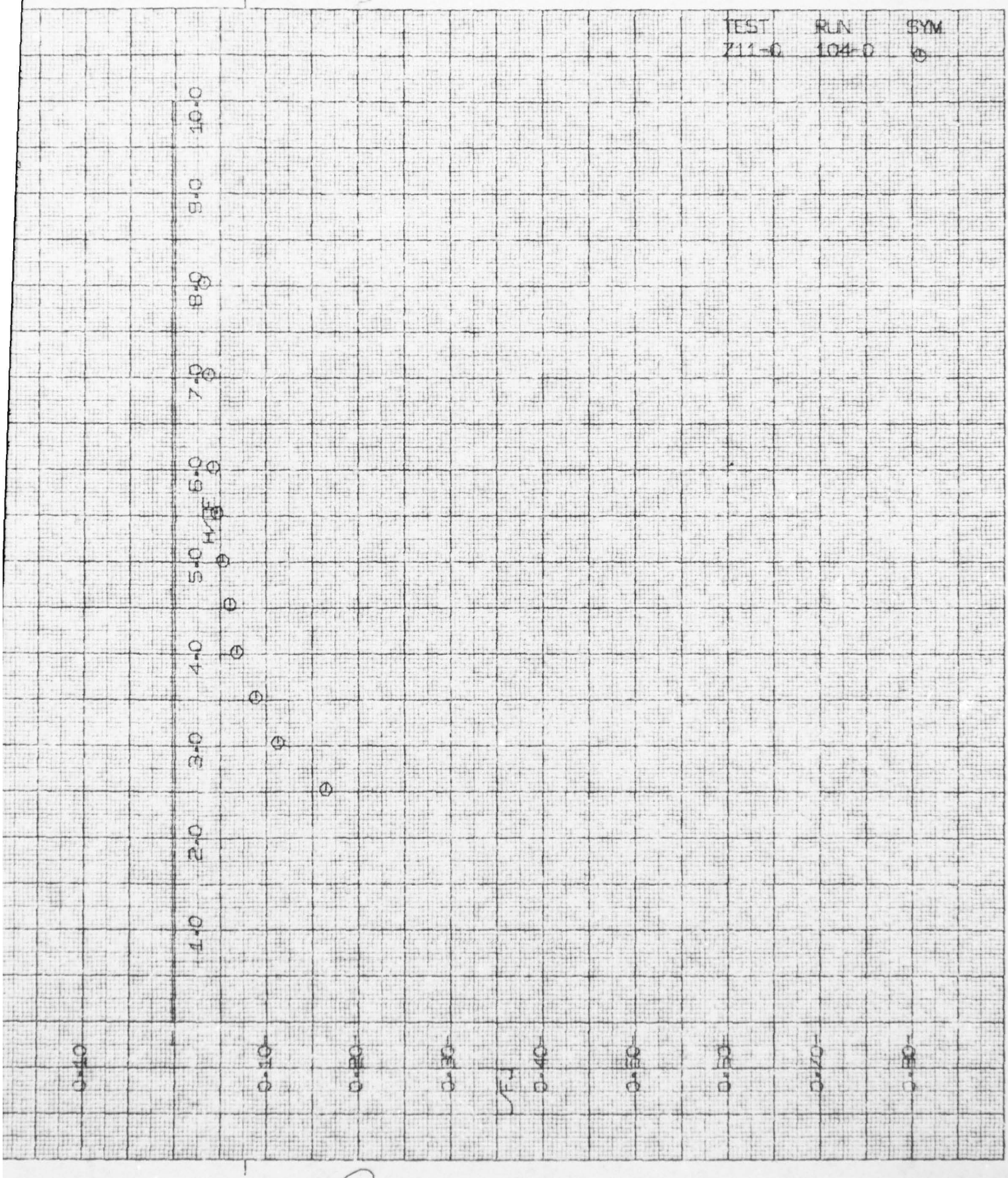

PLOT 102 FORM 02
ZZ-BZ-BB
0·10
M/F JC
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·10
0·20
R/F JB
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·20
0·20
0·10
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·10


TEST
711-0
RUN
102-0
SYM
10-0
9-0
8-0
7-0
6-0
5-0
4-0
3-0
2-0
1-0
H/DE
0-10
0-10
0-20
0-30
0-40
0-50
0-60
0-70
0-80
F
2


PLOT 103 FORM 02
ZZ-BZ-30
0-10
M/FJC
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
0-10
0-20
R/FJB
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE
0-20
0-10
1-0
2-0
3-0
4-0
5-0
6-0
7-0
8-0
9-0
10-0
H/DE


TEST
711-0
RUN
108-0
SYM
0.01
0.6
0.8
0.7
0.9
0.4
0.5
0.4
0.3
0.2
0.1


PLOT 104 FORM 02
0·10
M/F IC
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·10
0·20
R/F JB
1·0
2·0
3·0
4·0
5·0
H/DE
6·0
7·0
8·0
9·0
10·0
0·20
0·30
0·10
1·0
2·0
3·0
4·0
5·0
6·0
7·0
8·0
9·0
10·0


TEST
711-0
RUN
104-0
SYM
0.01
0.6
0.8
0.7
0.9
0.5
0.4
0.3
0.2
0.1
0.0
0.15
0.25
0.35
0.45
0.55
0.65
0.75
0.85
0.95

DATE	RUN	CONFIGURATION	TYPE RUN	V_O (KNOTS)	α_g °	ψ_g °	H_g (IN)	Z_R (IN)	Y_R (IN)	X_R (IN)	P_{P1}/P_{P3} (PSI)	P_{DL}/P_{DR} (PSI)	T °F	TARE	PHOTO	REMARKS
5/13/77	1	$N_3' N_{10}' N_{11}' P_{31} F_1 I_1$ RAKE	TUFT	3	0	0	3.30	—	—	—	151 154	0	70			
	2	↓	↓	↓	↓	↓	4.62	—	—	—	↓	↓	↓			
	3						10.56	—	—	—		↓				
	4						6.60	—	—	—		17.5 17.5				
	5		↓				3.30	—	—	—		↓	↓			
	6		R_{1-5}				↓	6.80	A	-1.95			400			
	7		↓				↓	13.80	↓	↓			↓			
5/19/77	8						4.60	8.10								
	9						↓	15.10								
	10		↓				6.60	10.10								
	11		R_{1-4}				↓	17.00								
	12		↓				10.56	10.10								
	13						↓	17.10		↓						
	14						3.30	10.00		-21.95						
	15						↓	17.00		↓						
	16							24.00								
	17						↓	31.00								
	18						4.60									
	19						↓	24.00								
	20	↓	↓	↓	↓	↓	↓	17.00	↓	↓	↓	↓	↓			

NOTE: THE X_R, Y_R, Z_R AXIS OF THE RAKE LOCATION ORIGINATES AT THE FUSELAGE NOSE, THE MODEL PLANE OF SYMMETRY, AND THE GROUND PLANE.

RAKE SCHEDULE Y_R ~ A: 8.00, 6.00, 4.00, 2.00, 0, -2.00

DATE	RUN	CONFIGURATION	TYPE RUN	V_O (KNOTS)	$\alpha_E°$	$\psi_E°$	H_E (IN.)	Z_R (IN.)	Y_R (IN.)	X_R (IN.)	P_{A1}/P_{P3} (PSI)	P_{DL}/P_{DR} (PSI)	T °F	TARE	PHOTO	REMARKS
5/14/77	21	$N_3' N_{10}' N_{11}' P_{31}$ $F_1 I_1$ RAKE	R_{1-4}	3	0	0	4.60	10.00	A	-21.95	151 154	17.5 17.5	400			
	22	↓	↓	↓	↓	↓	6.60	↓	↓	↓	↓	↓	↓			
	23						↓	17.00								
	24							24.00								
	25						↓	31.00								
	26						10.56	↓								
	27						↓	24.00								
	28			↓			↓	17.00		↓						
	29	↓		0			3.30	6.80		-1.95						
5/15/77	30	$N_3' N_{10}' N_{11}' P_{31-2}$		3			↓	↓		↓						
	31	↓		↓			↓	13.80								
	32						4.60	8.10								
	33						↓	15.10								
	34						6.60	10.10								
	35	↓					↓	17.10			↓	↓				
5/16/77	36	$N_3^2 N_{13}^2 P_{13}$					3.52	7.26			177 169	11.0 11.0				
	37	↓					↓	14.74			↓	↓				
	38						4.93	8.65								
	39						↓	16.13								
	40	↓	↓	↓	↓	↓	7.05	10.77	↓	↓	↓	↓	↓			

GENERAL DYNAMICS
Convair Division

REPORT LST 712
PAGE 235

DATE	RUN	CONFIGURATION	TYPE RUN	V_o (KNOTS)	α_E °	ψ_E °	H_B (IN)	Z_R (IN)	Y_R (IN.)	X_R (IN)	P_{P_1}/P_{P_3} (PSI)	P_{D_4}/P_{D_R} (PSI)	T °F	TARE	PHOTO	REMARKS
5/16/77	41	N_3^2 N_{13}^2 P_{13} $F_1 I_1$ RAKE	R_{1-4}	3	0	0	7.05	8.27	A	-1.75	177 / 169	11.0 / 11.0	400			
	42						11.28	↓								
	43						↓	10.79		↓						
	44						3.52	10.68		-23.31						
	45						↓	18.16								
	46						4.93	↓								
	47						↓	10.68								
	48						7.05	↓								
	49							18.16								
	50						↓	25.64								
	51						11.28	↓								
	52							18.16								
	53						↓	10.68		↓						
	54						3.52	18.16		-14.68						
	55						↓	25.64								
	56						4.93	↓								
	57						↓	18.16								
	58						7.05	↓								
	59							25.64								
	60	↓	↓	↓	↓	↓	↓	33.11	↓	↓	↓	↓	↓			

DATE	RUN	CONFIGURATION	TYPE RUN	V_a (KNOTS)	α_E°	ψ_E°	$H_{\bar{g}}$ (IN.)	Z_R (IN)	Y_R (IN)	X_R (IN)	P_{T_1}/P_{T_3} (PSI)	P_{S_4}/P_{S_R} (PSI)	T °F	TARE	PHOTO	REMARKS
5/16/77	61	$N_3^2 N_{13}^2 P_{13}^2 F_1 I_1$ RAKE	R_{1-4}	3	0	0	11.28	33.11	A	-44.68	177 169	11.0 11.0	400			
	62	↓	↓	↓	↓	↓	↓	25.64	↓	↓	↓	↓	↓			
	63	↓	↓	↓	↓	↓	↓	18.16	↓	↓	↓	↓	↓			
	64	↓	R_{1-5}	20	↓	↓	3.52	7.26	↓	-1.95	↓	↓	↓			
	65	↓	↓	↓	↓	↓	4.93	8.65	↓	↓	↓	↓	↓			
	66	↓	↓	↓	↓	↓	↓	14.74	↓	↓	↓	↓	↓			
	64-1	↓	↓	↓	↓	↓	3.52	7.26	↓	↓	↓	↓	↓			
	65-1	↓	↓	↓	↓	↓	4.93	8.65	↓	↓	↓	↓	↓			
	66-1	↓	↓	↓	↓	↓	↓	14.74	↓	↓	↓	↓	↓			
	67	↓	↓	↓	↓	↓	7.05	10.68	↓	↓	↓	↓	↓			
5/17/77	68	↓	↓	↓	↓	↓	3.52	7.26	↓	-14.77	↓	↓	↓			
	69	↓	↓	↓	↓	↓	↓	14.74	↓	↓	↓	↓	↓			
	70	↓	↓	↓	↓	↓	4.93	↓	↓	↓	↓	↓	↓			
	71	↓	↓	↓	↓	↓	↓	8.65	↓	↓	↓	↓	↓			
	72	↓	↓	↓	↓	↓	7.05	10.68	↓	↓	↓	↓	↓			
	73	$N_3' N_{10}' N_{11}' P_{31}$	↓	↓	↓	↓	3.30	6.80	↓	-1.95	151 154	17.5 17.5	↓			
	74	↓	↓	↓	↓	↓	↓	13.80	↓	↓	↓	↓	↓			
	75	↓	↓	↓	↓	↓	4.62	8.10	↓	↓	↓	↓	↓			
	76	↓	↓	↓	↓	↓	↓	13.80	↓	↓	↓	↓	↓			
	77	↓	↓	↓	↓	↓	6.60	10.00	↓	↓	↓	↓	↓			

NOTE: RUNS 64-66: SEVERAL RAKE TUBES WERE NOT CONNECTED.

DATE	RUN	CONFIGURATION	TYPE RUN	V_o (KNOTS)	$\alpha_i°$	$\psi_i°$	H_{δ} (IN)	Z_R (IN)	Y_R (IN)	X_R (IN)	P_{P_1}/P_{P_3} (PSI)	P_{D_4}/P_{D_R} (PSI)	T °F	TARE	PHOTO	REMARKS
5/17/77	78	$N_3' N_D' N_4' P_{31}$ $F_1 I_1$ RAKE	R_{1-5}	20	0	0	3.30	13.80	A	-13.75	151	17.5	400			
	79						4.62				154	17.5				
	80						6.60									
	81					-67	3.30		B	-18.25						
	82						4.62									
	83						6.60		15.80							
	84						3.30		B	-6.75						
5/18/77	85						4.62									
	86						6.60									

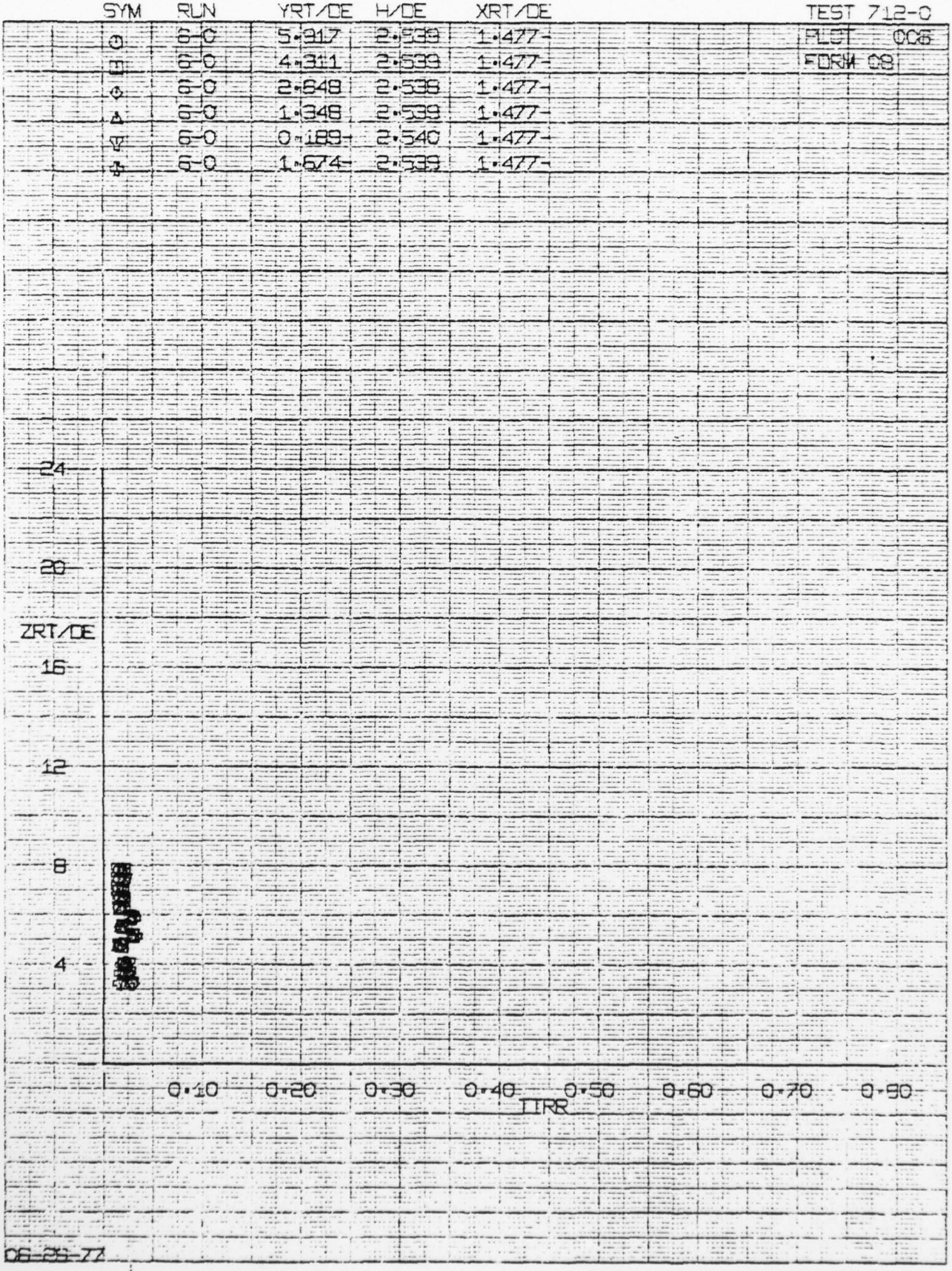
RAKE SCHEDULE ~ Y_R B: -4.00, -2.00, 0, 2.00, 4.00, 6.00, 15.80

6462 (6-77)

LST 712
DATA PLOTS, IN RUN NUMBER ORDER

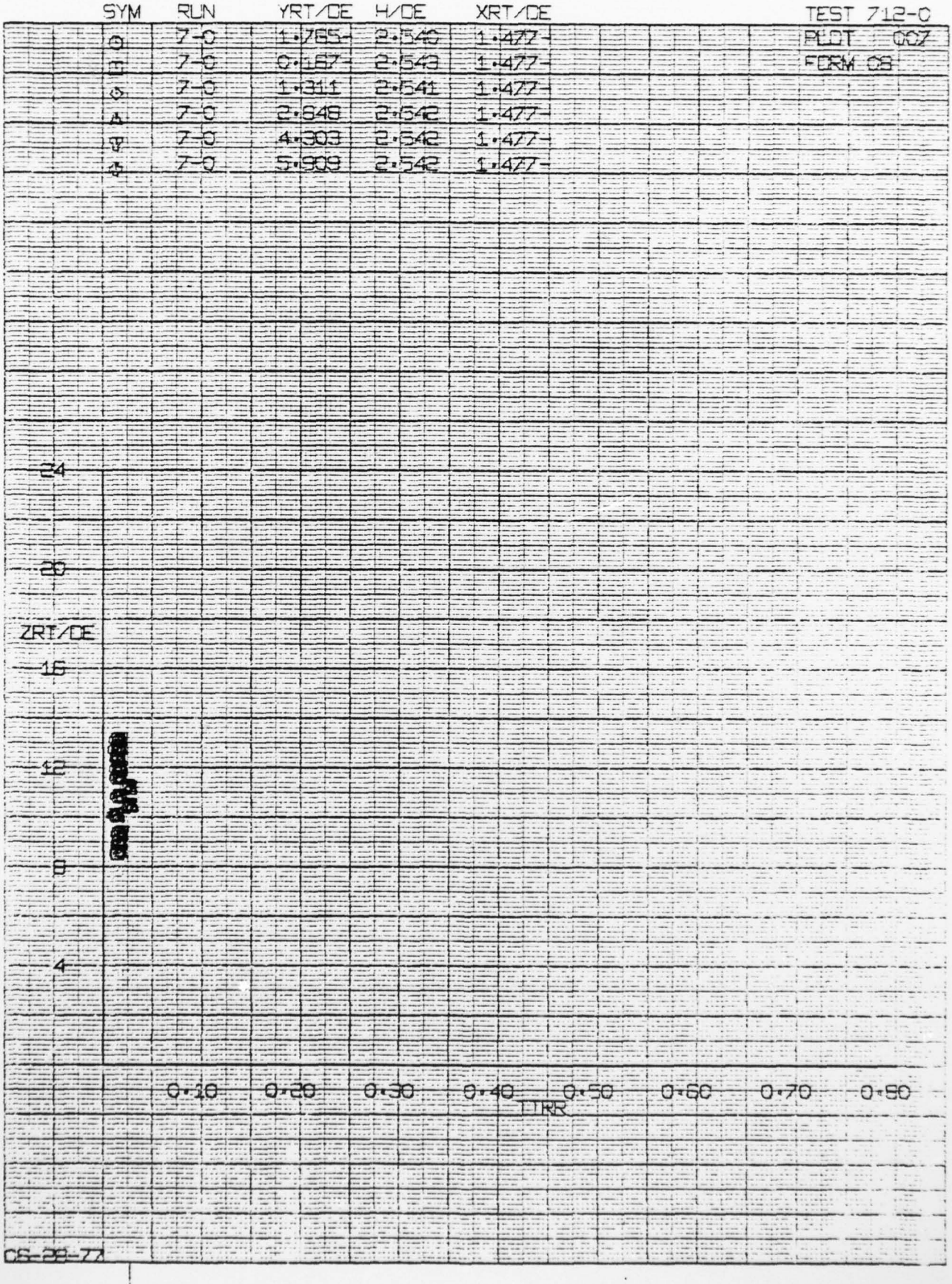
SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	6-0	5.317	2.539	1.477
□	6-0	4.311	2.539	1.477
◇	6-0	2.848	2.538	1.477
△	6-0	1.348	2.539	1.477
▽	6-0	0.189	2.540	1.477
+	6-0	1.674	2.539	1.477

TEST 712-0
PLOT 006
FORM 08



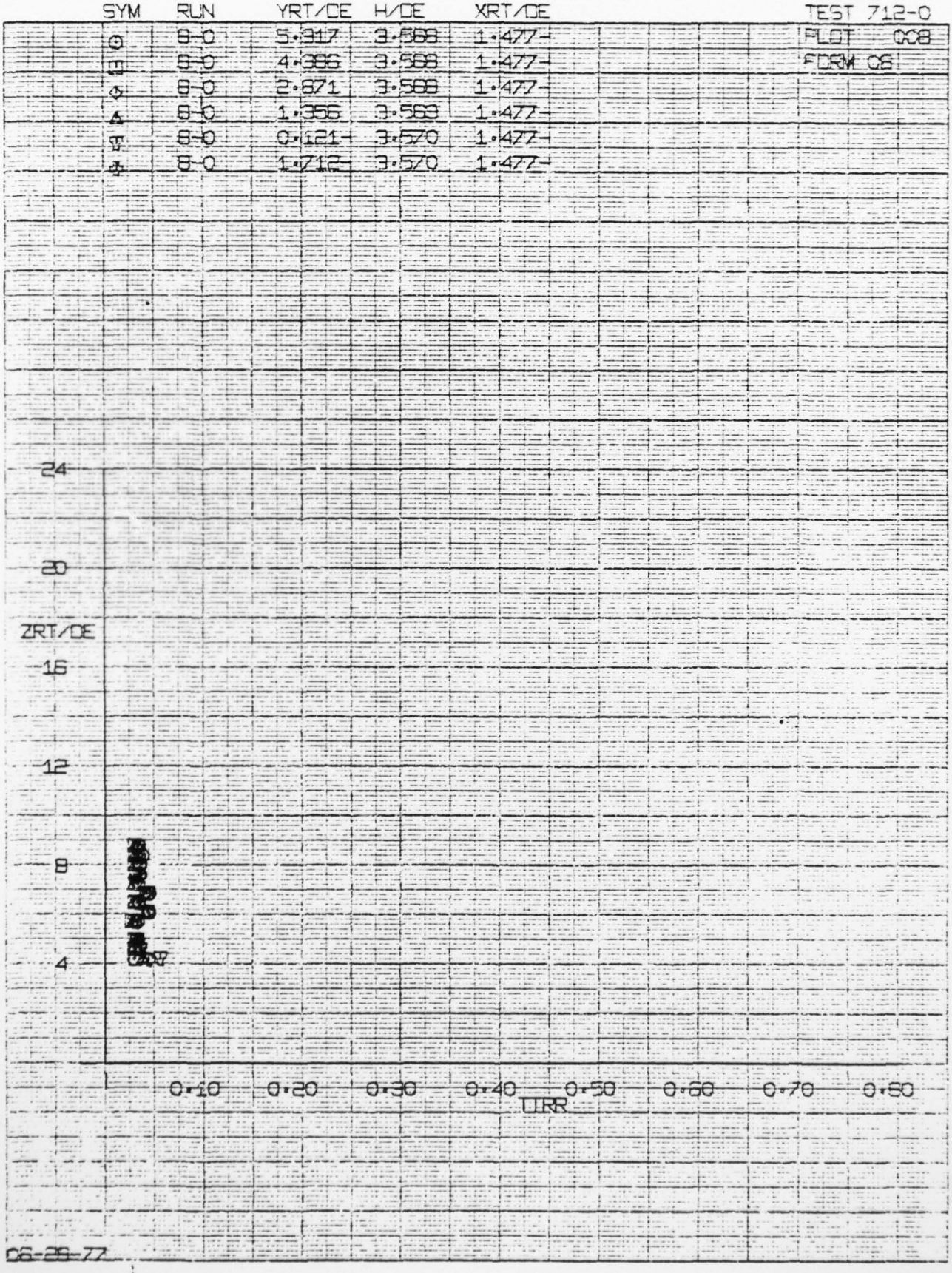
TEST 712-C
PLOT 007
FORM 05

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	7-0	1.765-	2.540	1.477-
□	7-0	0.187-	2.543	1.477-
◇	7-0	1.311	2.541	1.477-
△	7-0	2.848	2.542	1.477-
▽	7-0	4.303	2.542	1.477-
◁	7-0	5.909	2.542	1.477-



SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	8-0	5.317	3.588	1.477-
⊟	8-0	4.386	3.588	1.477-
◇	8-0	2.871	3.588	1.477-
△	8-0	1.356	3.563	1.477-
⊞	8-0	0.121-	3.570	1.477-
⊕	8-0	1.712-	3.570	1.477-

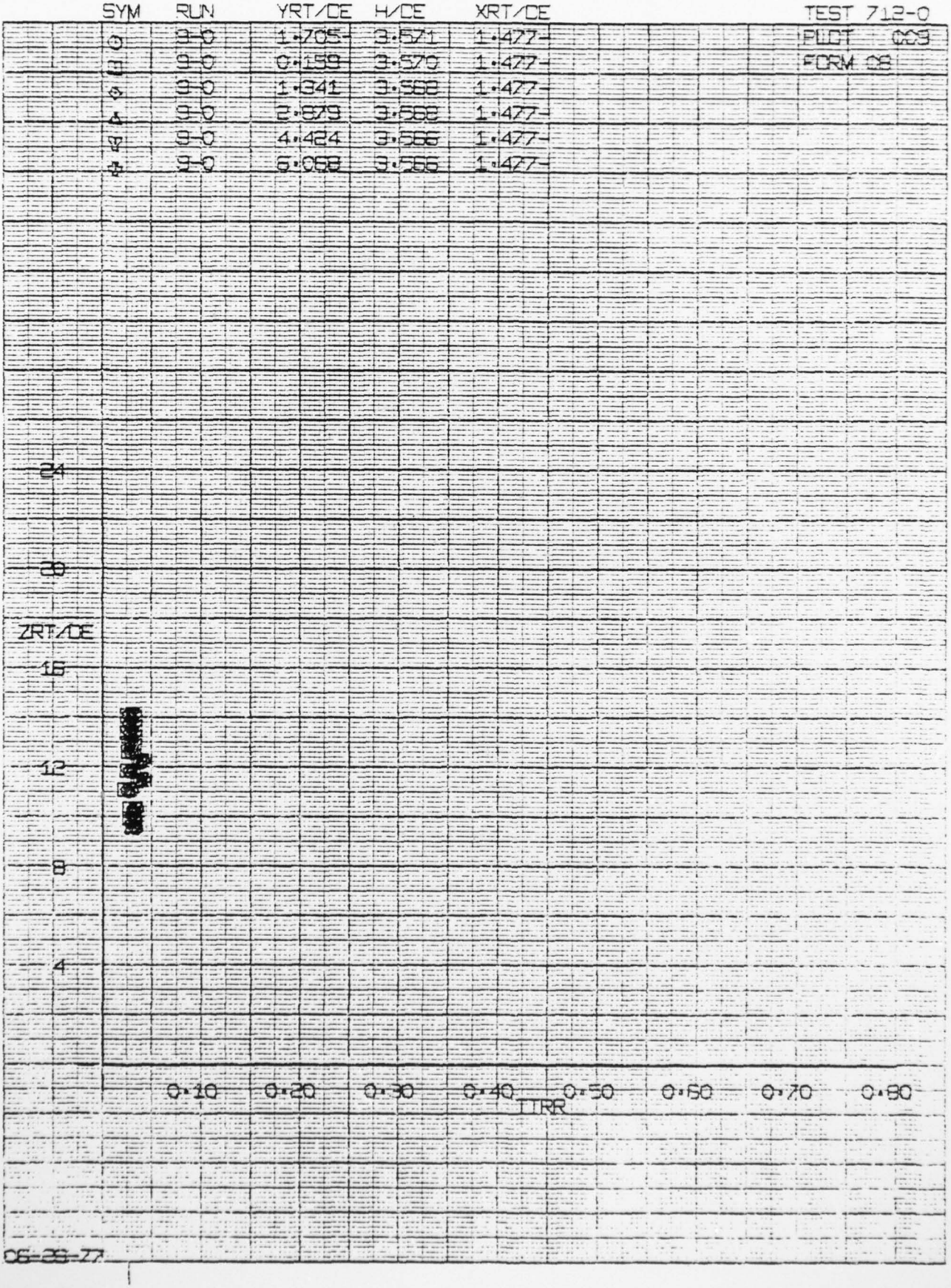
TEST 712-0
PLOT 008
FORM 08



06-26-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	9-0	1.705-	3.571	1.477-
□	9-0	0.159-	3.570	1.477-
◇	9-0	1.341	3.568	1.477-
△	9-0	2.879	3.568	1.477-
▽	9-0	4.424	3.566	1.477-
+	9-0	6.068	3.566	1.477-

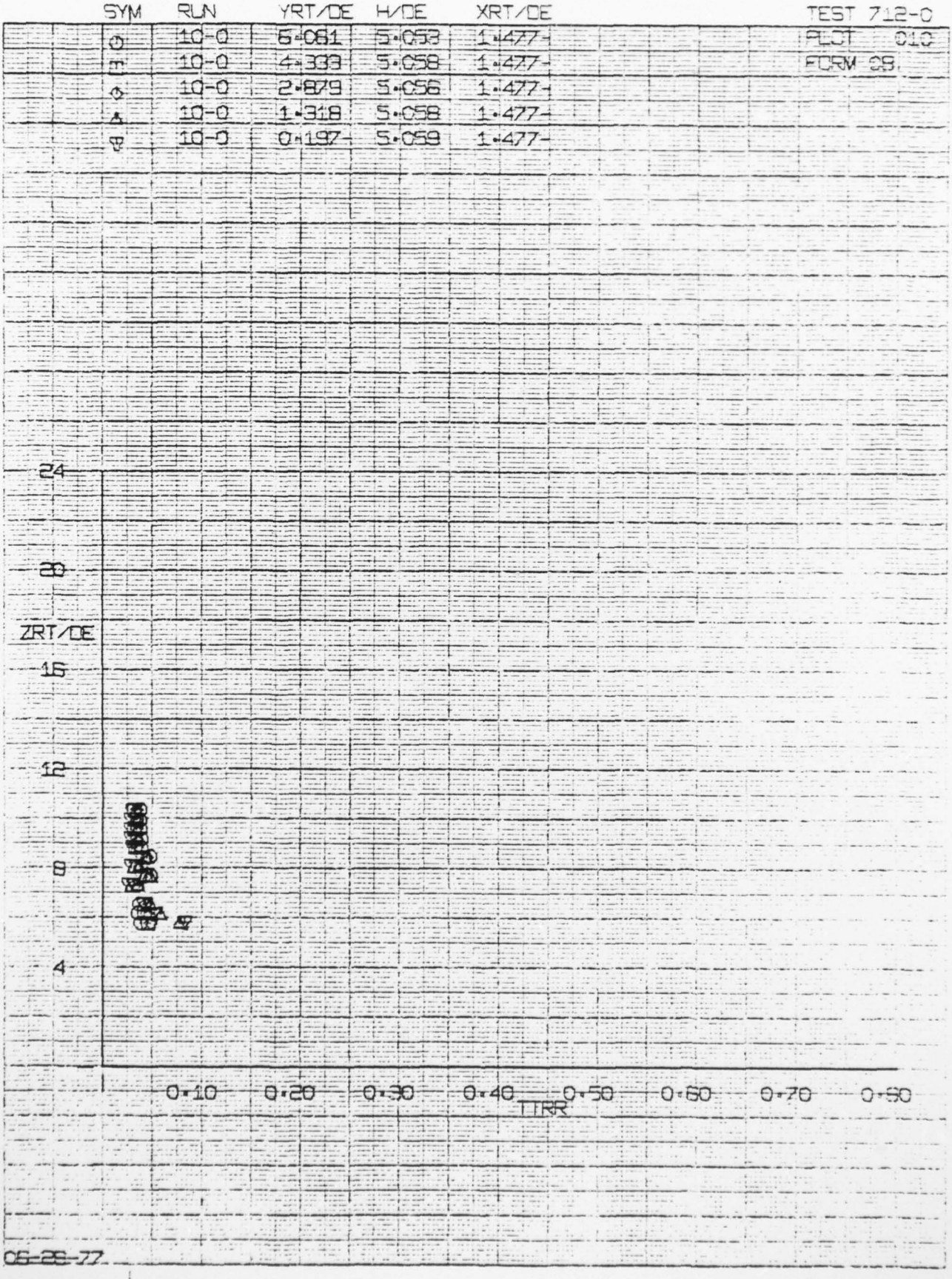
TEST 712-0
PLOT 003
FORM 08



06-26-77

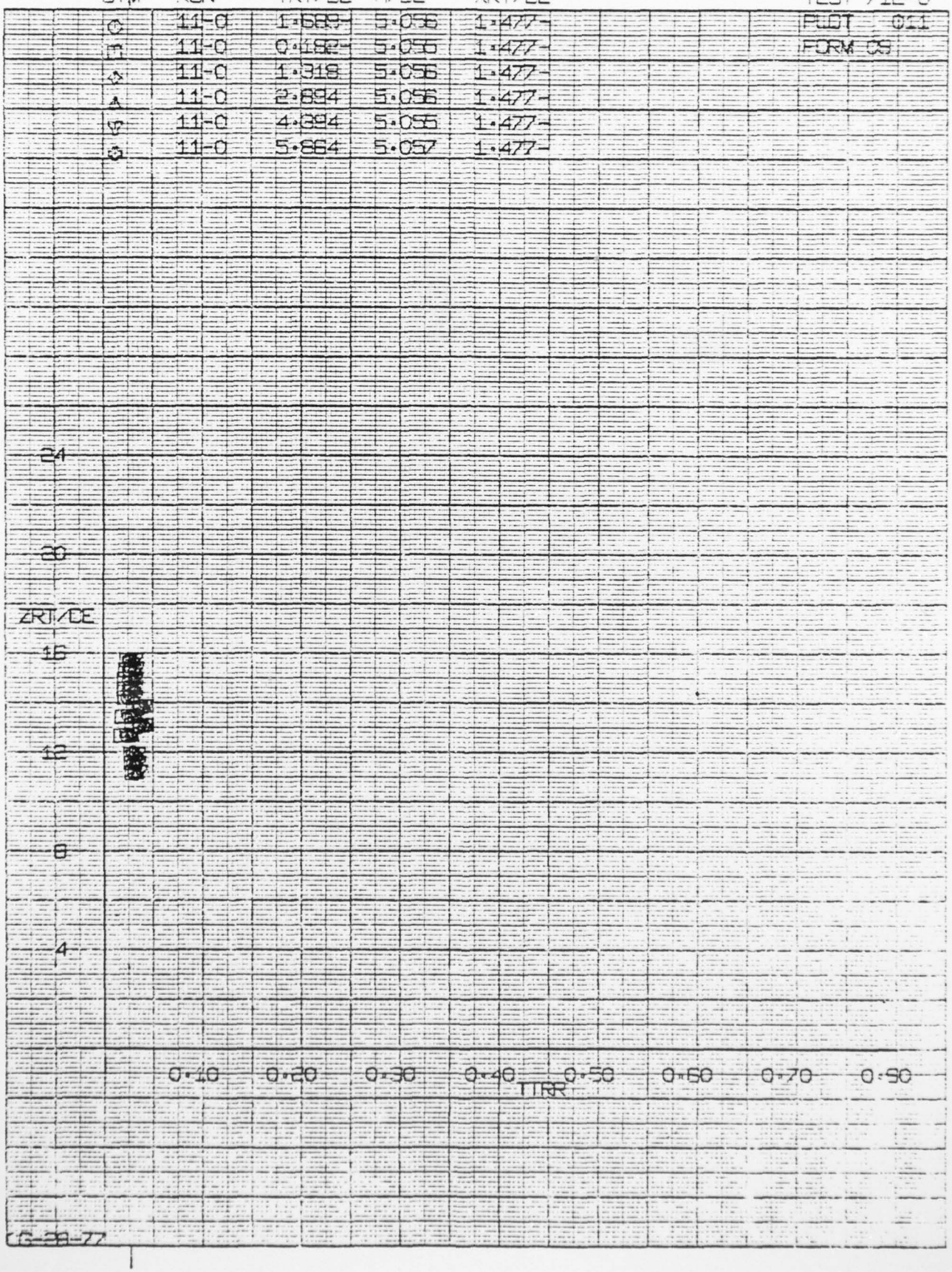
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	10-0	6.061	5.053	1.477
□	10-0	4.333	5.058	1.477
◇	10-0	2.879	5.056	1.477
△	10-0	1.318	5.058	1.477
▽	10-0	0.197	5.059	1.477

TEST 712-0
PLOT 010
FORM 28



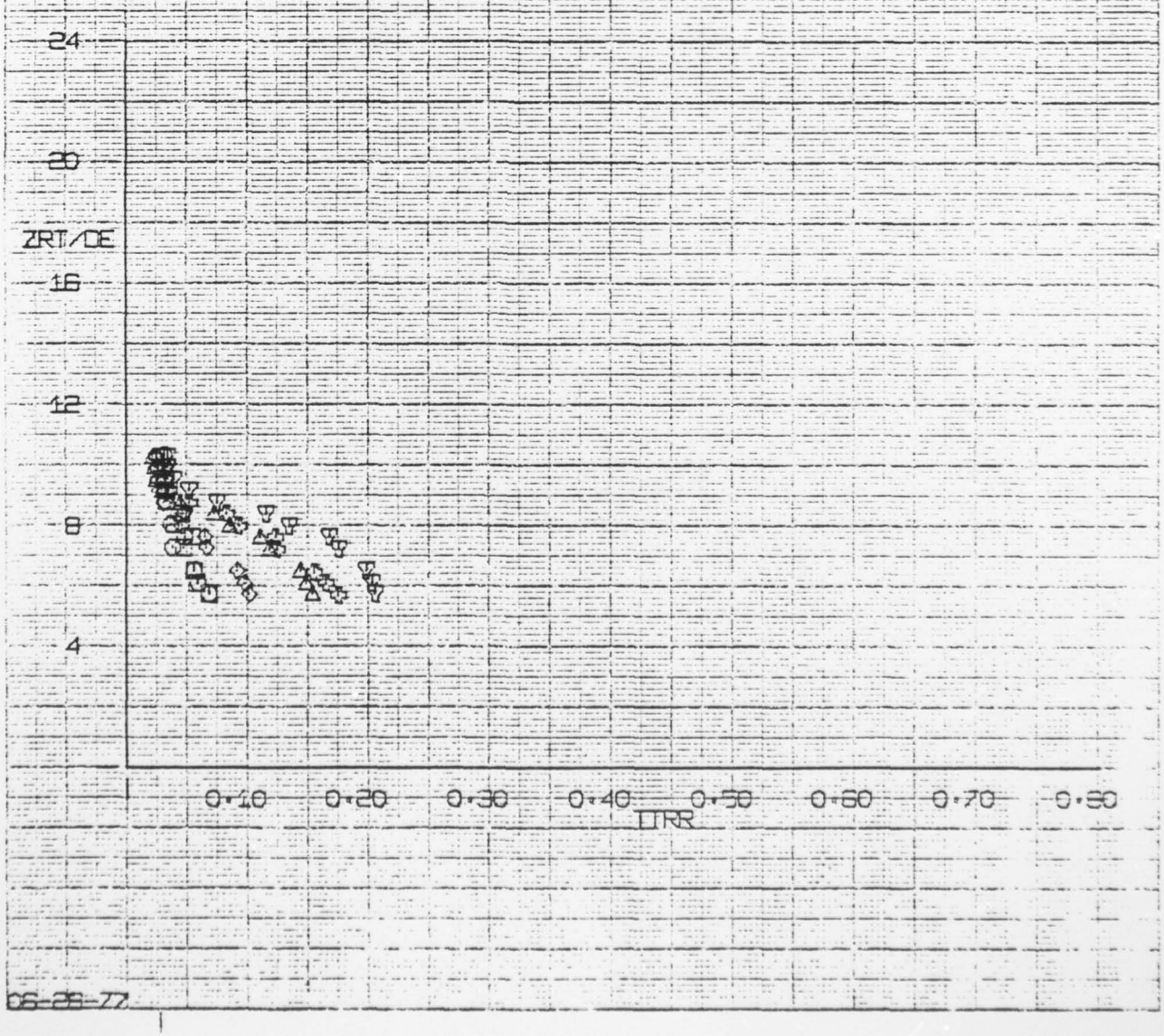
SYM	RUN	YRT/CE	H/CE	XRT/CE
○	11-0	1.689-	5.056	1.477-
□	11-0	0.182-	5.056	1.477-
◇	11-0	1.318	5.056	1.477-
△	11-0	2.894	5.056	1.477-
▽	11-0	4.394	5.055	1.477-
⊙	11-0	5.864	5.057	1.477-

TEST 712-0
PILOT 011
FORM 05



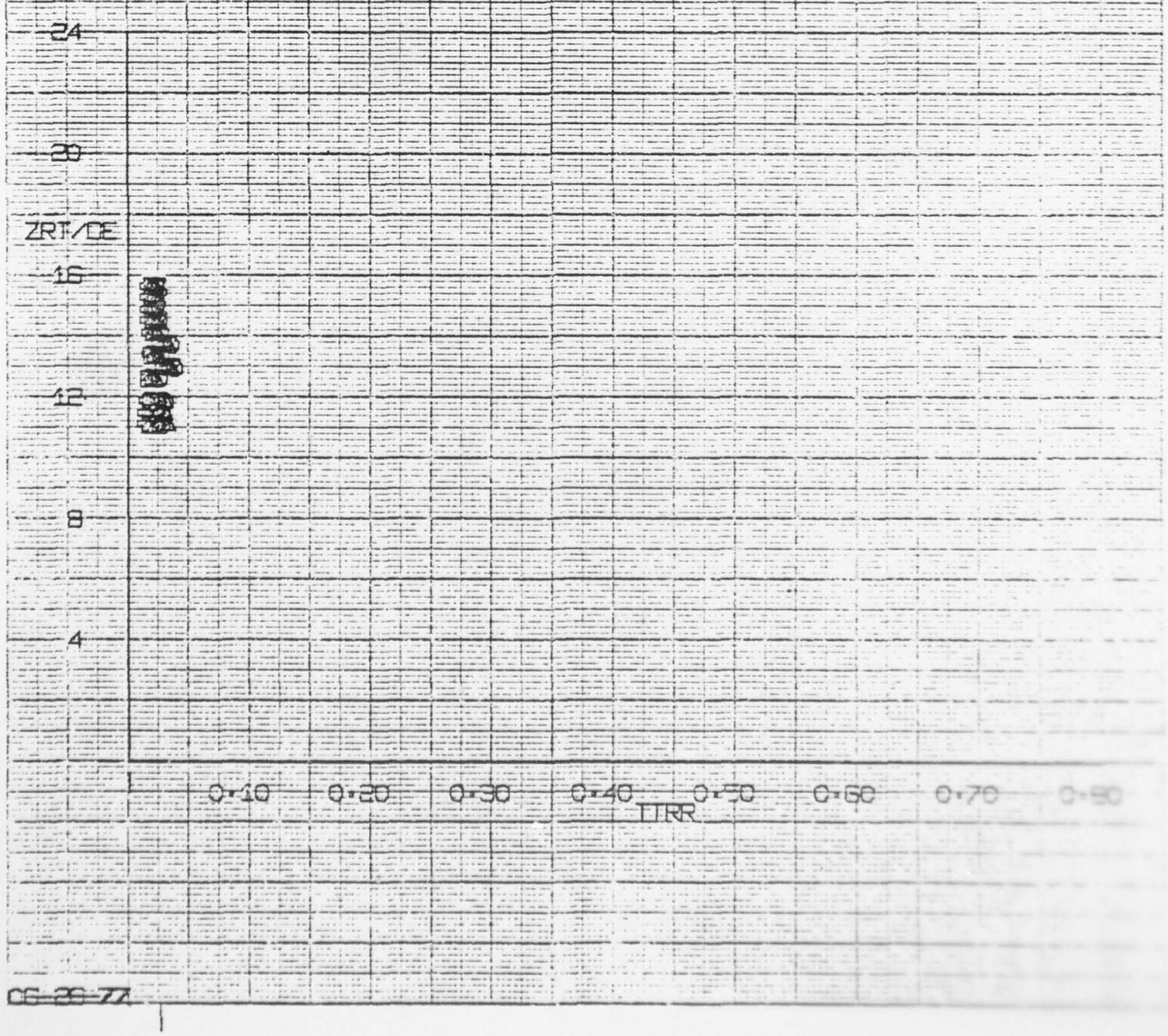
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	12-0	5.856	8.053	1.477-
□	12-0	4.333	8.054	1.477-
◇	12-0	2.986	8.054	1.477-
△	12-0	1.288	8.054	1.477-
▽	12-0	0.227-	8.053	1.477-
⇩	12-0	1.682-	8.054	1.477-

TEST 712-0
PLOT 012
FORM 08



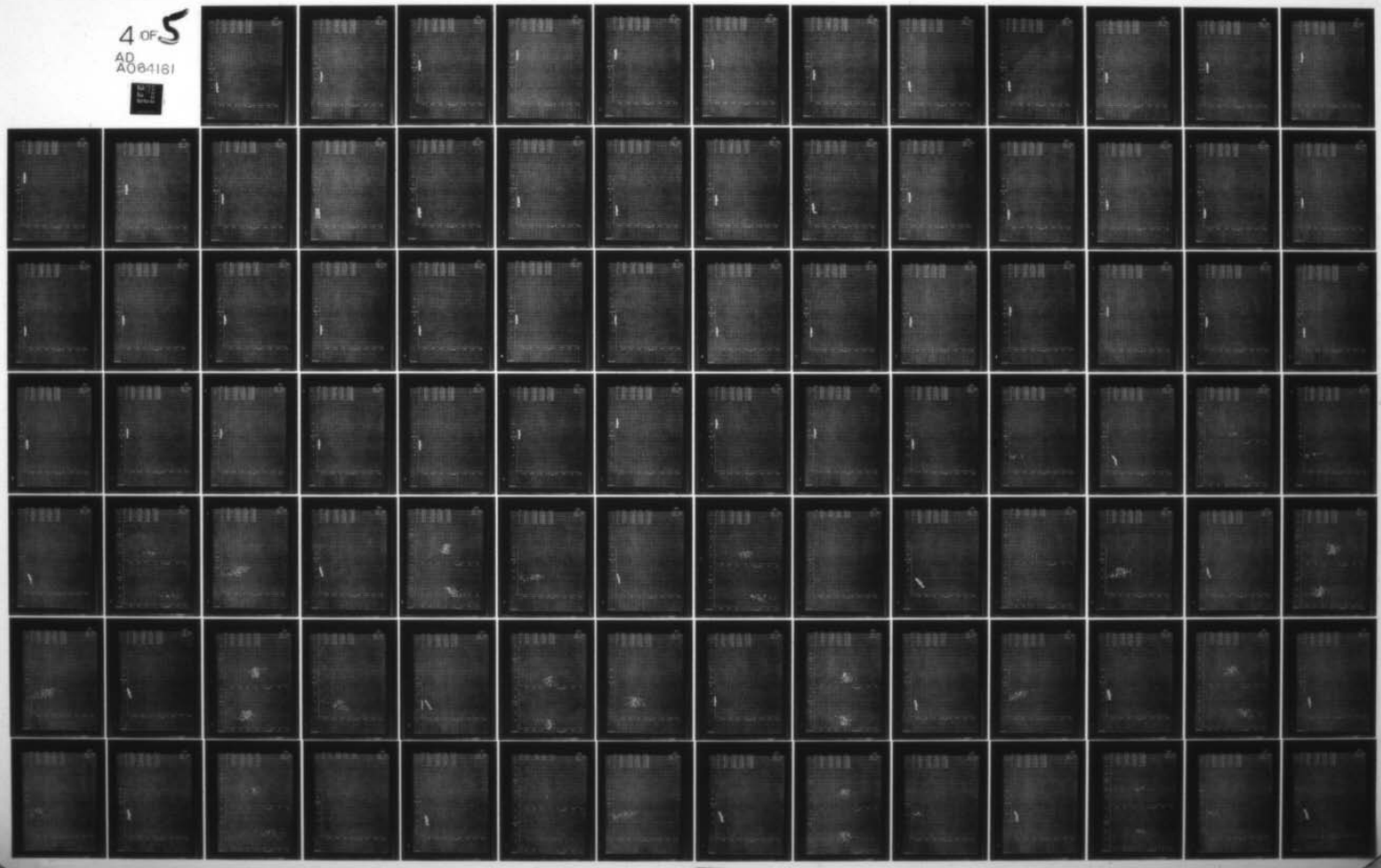
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	13-0	1.674-	8.054	1.477-
□	13-0	0.136-	8.055	1.477-
◇	13-0	1.295	8.055	1.477-
△	13-0	2.841	8.053	1.477-
▽	13-0	4.371	8.054	1.477-
◁	13-0	5.909	8.051	1.477-

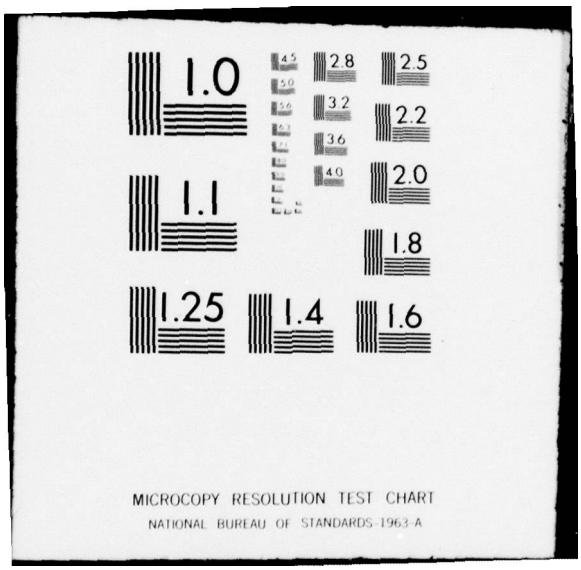
TEST 712-0
PLOT 013
FORM 08



AD-A064 161 GENERAL DYNAMICS SAN DIEGO CA CONVAIR DIV F/G 1/3
LOW SPEED WIND TUNNEL TESTS TO EVALUATE THE AERODYNAMIC AND THE--ETC(U)
AUG 77 M B EILERT N00014-76-C-0698
UNCLASSIFIED CASD-GDLST-711 NL

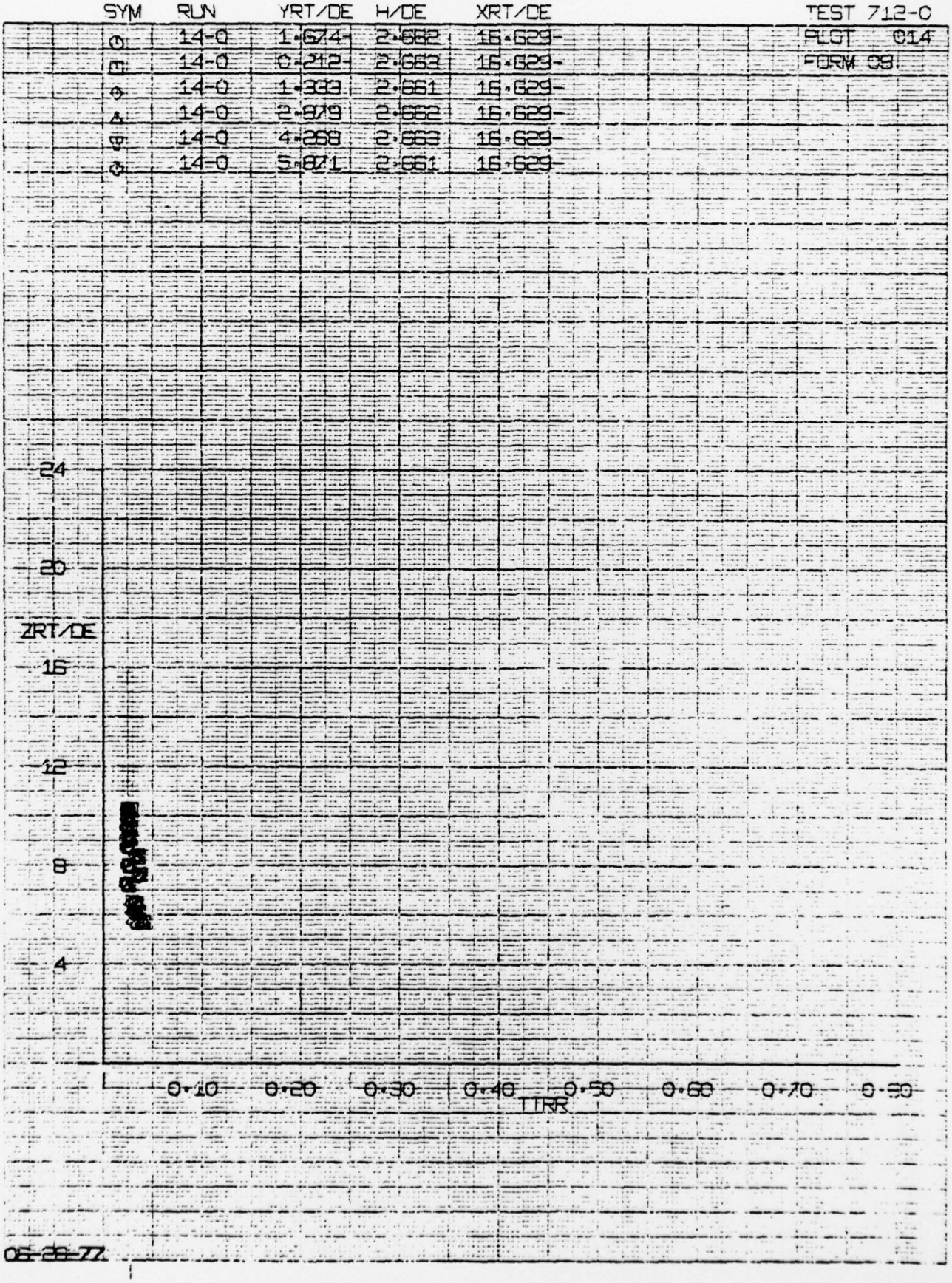
4 OF 5
AD A064181




1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	14-0	1.674-	2.662	16.629-
□	14-0	0.212-	2.663	16.629-
◇	14-0	1.333	2.661	16.629-
△	14-0	2.879	2.662	16.629-
▽	14-0	4.268	2.663	16.629-
⬡	14-0	5.871	2.661	16.629-

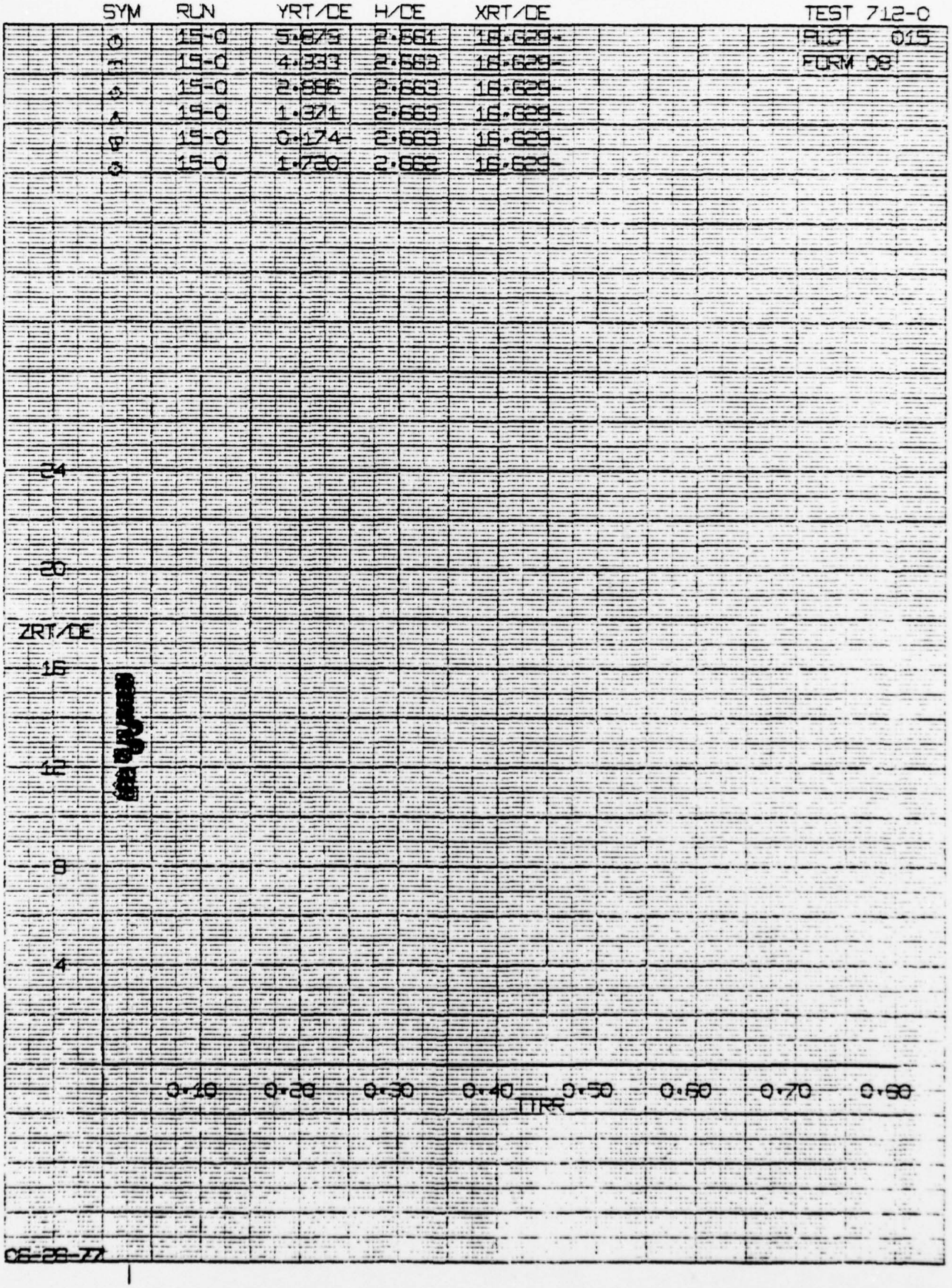
TEST 712-0
PLOT 014
FORM 09



06-28-77

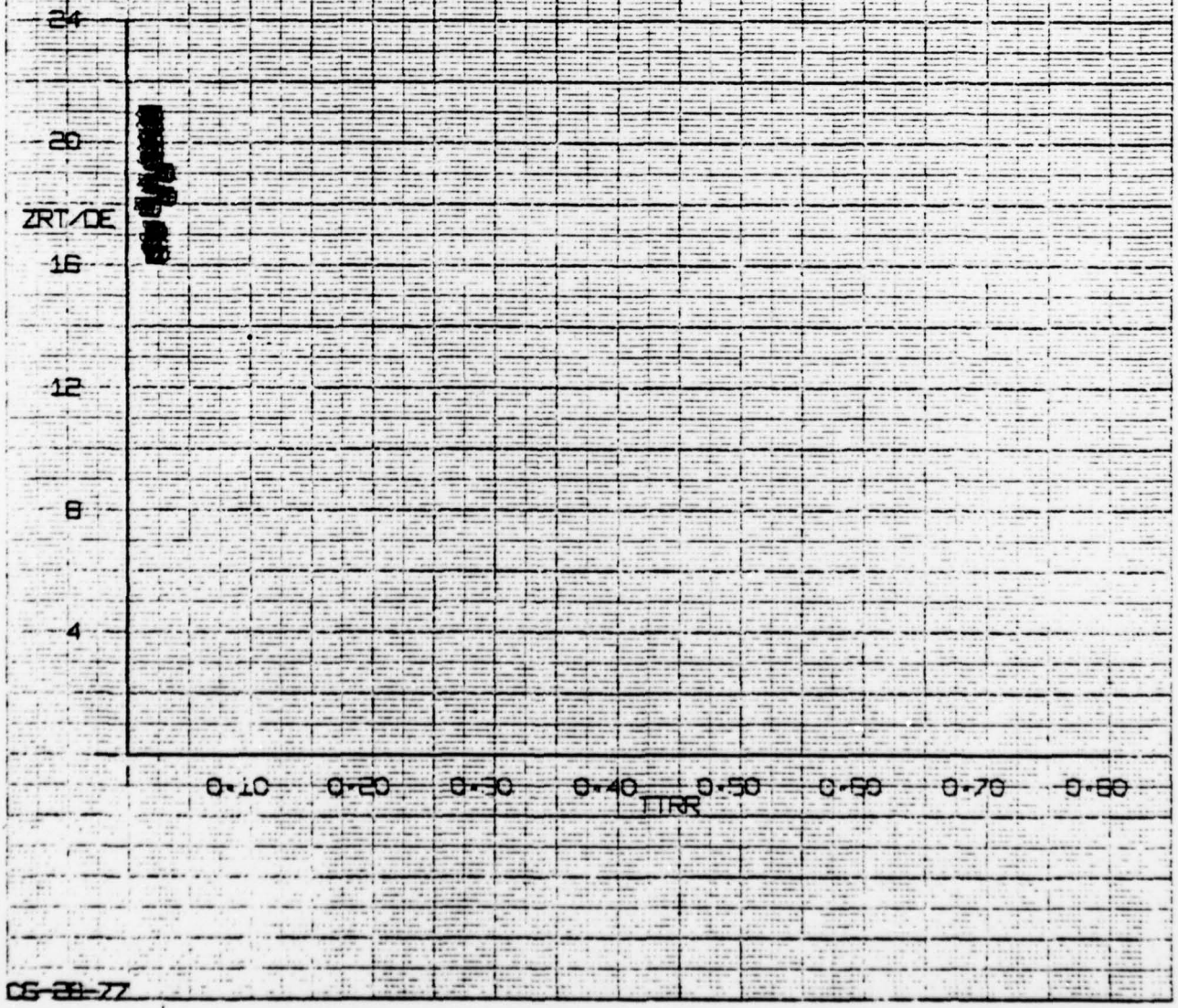
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	15-0	5.875	2.661	16.629-
□	15-0	4.333	2.663	16.629-
◇	15-0	2.886	2.663	16.629-
△	15-0	1.371	2.663	16.629-
▽	15-0	0.174-	2.663	16.629-
◁	15-0	1.720-	2.662	16.629-

TEST 712-0
PLOT 015
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	16-0	1.720-	2.663	16.629-
□	16-0	0.152-	2.663	16.629-
◇	16-0	1.926	2.663	16.629-
△	16-0	2.871	2.662	16.629-
▽	16-0	4.364	2.663	16.629-
⊙	16-0	5.826	2.662	16.629-

TEST 712-0
PLOT C16
FORM 08



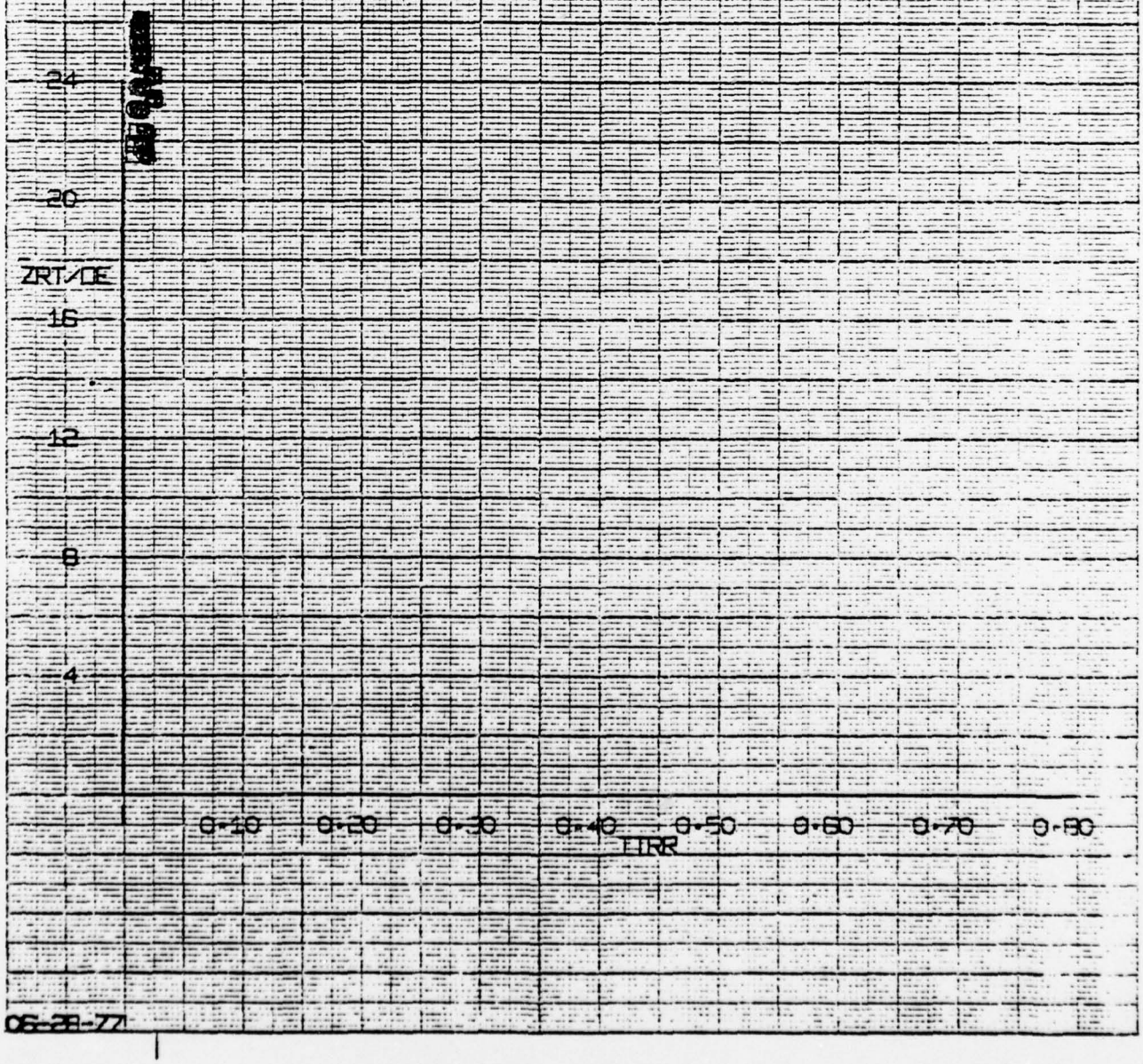
06-28-77

TEST 712-0

PLOT 017

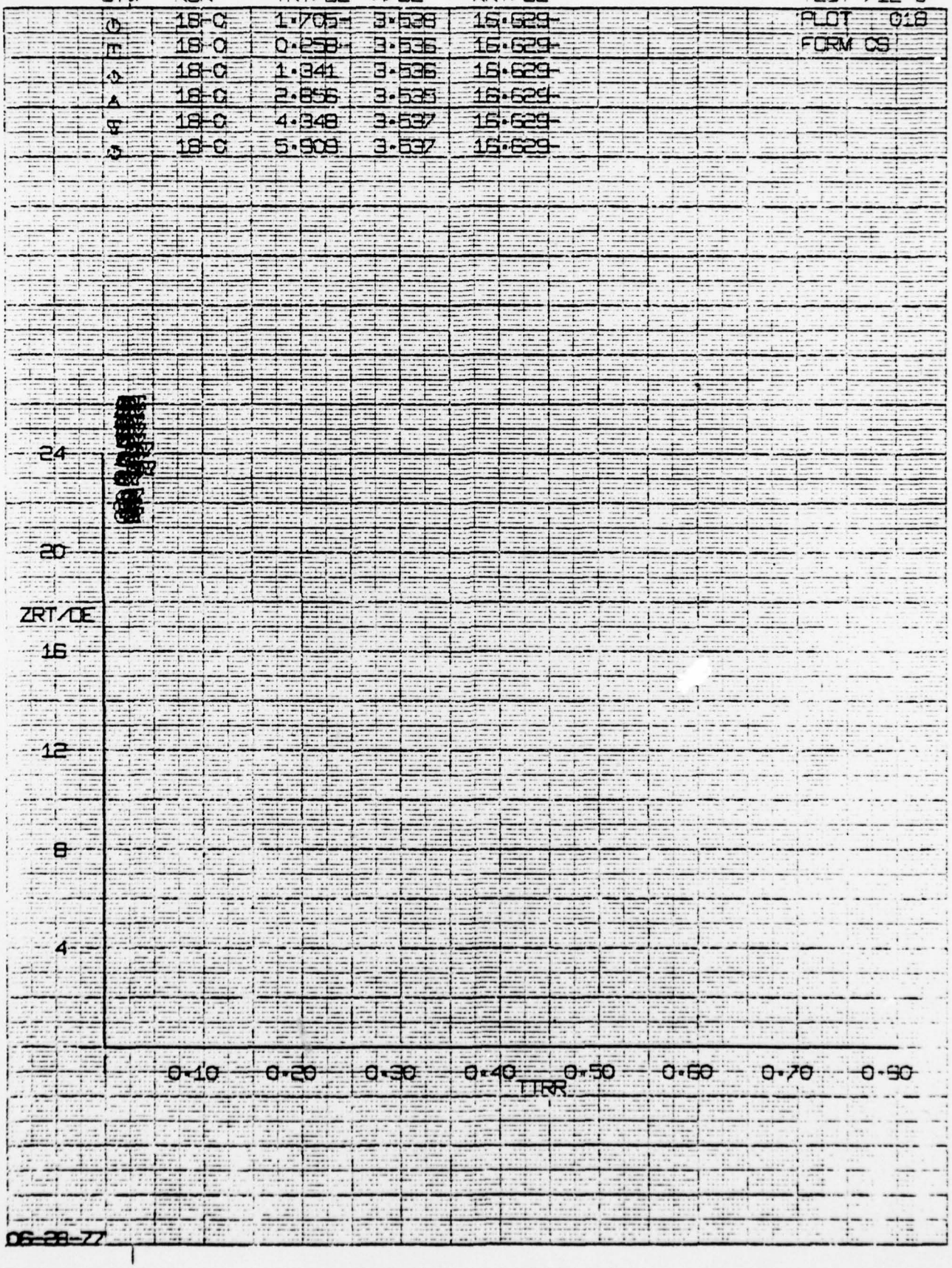
FORM 38

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	17-0	5.833	2.663	16.629
□	17-0	4.356	2.663	16.629
◇	17-0	2.833	2.662	16.629
△	17-0	1.364	2.661	16.629
▽	17-0	0.220-	2.665	16.629
◁	17-0	1.697-	2.663	16.629



SYM	RUN	YRT/DE	H/DE	XRT/DE
◇	18-0	1.705	3.538	16.629
□	18-0	0.258	3.536	16.629
◇	18-0	1.341	3.536	16.629
△	18-0	2.856	3.535	16.629
▽	18-0	4.348	3.537	16.629
○	18-0	5.909	3.537	16.629

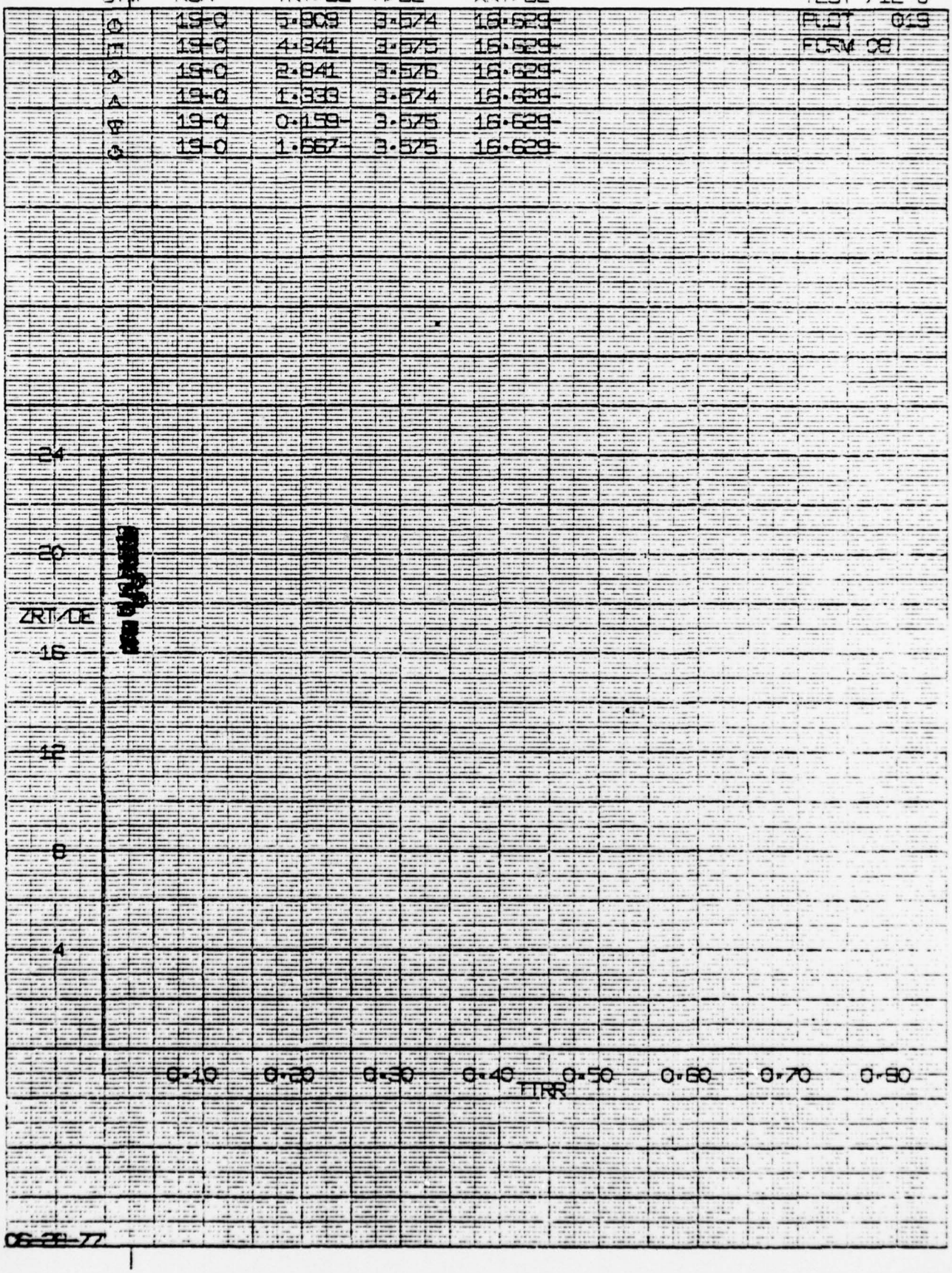
TEST 712-0
PLOT 018
FORM CS



06-28-77

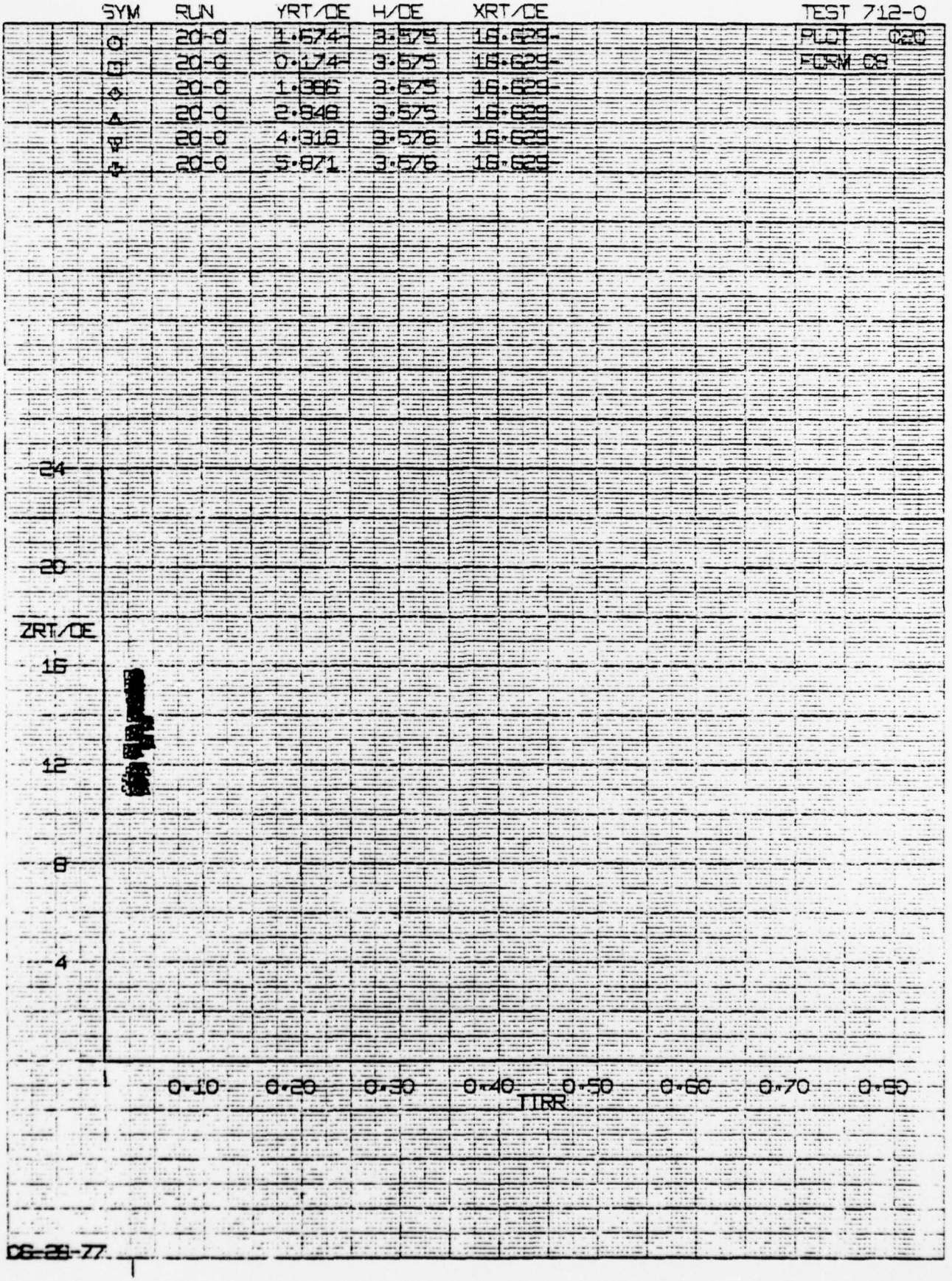
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	19-0	5.809	3.574	16.629-
□	19-0	4.841	3.575	16.629-
◇	19-0	2.841	3.575	16.629-
△	19-0	1.333	3.574	16.629-
▽	19-0	0.159-	3.575	16.629-
◁	19-0	1.567-	3.575	16.629-

TEST 712-0
PLOT 013
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	20-0	1.574-	3.575	16.629-
⊡	20-0	0.174-	3.575	16.629-
◇	20-0	1.386	3.575	16.629-
△	20-0	2.948	3.575	16.629-
▽	20-0	4.318	3.576	16.629-
◁	20-0	5.871	3.576	16.629-

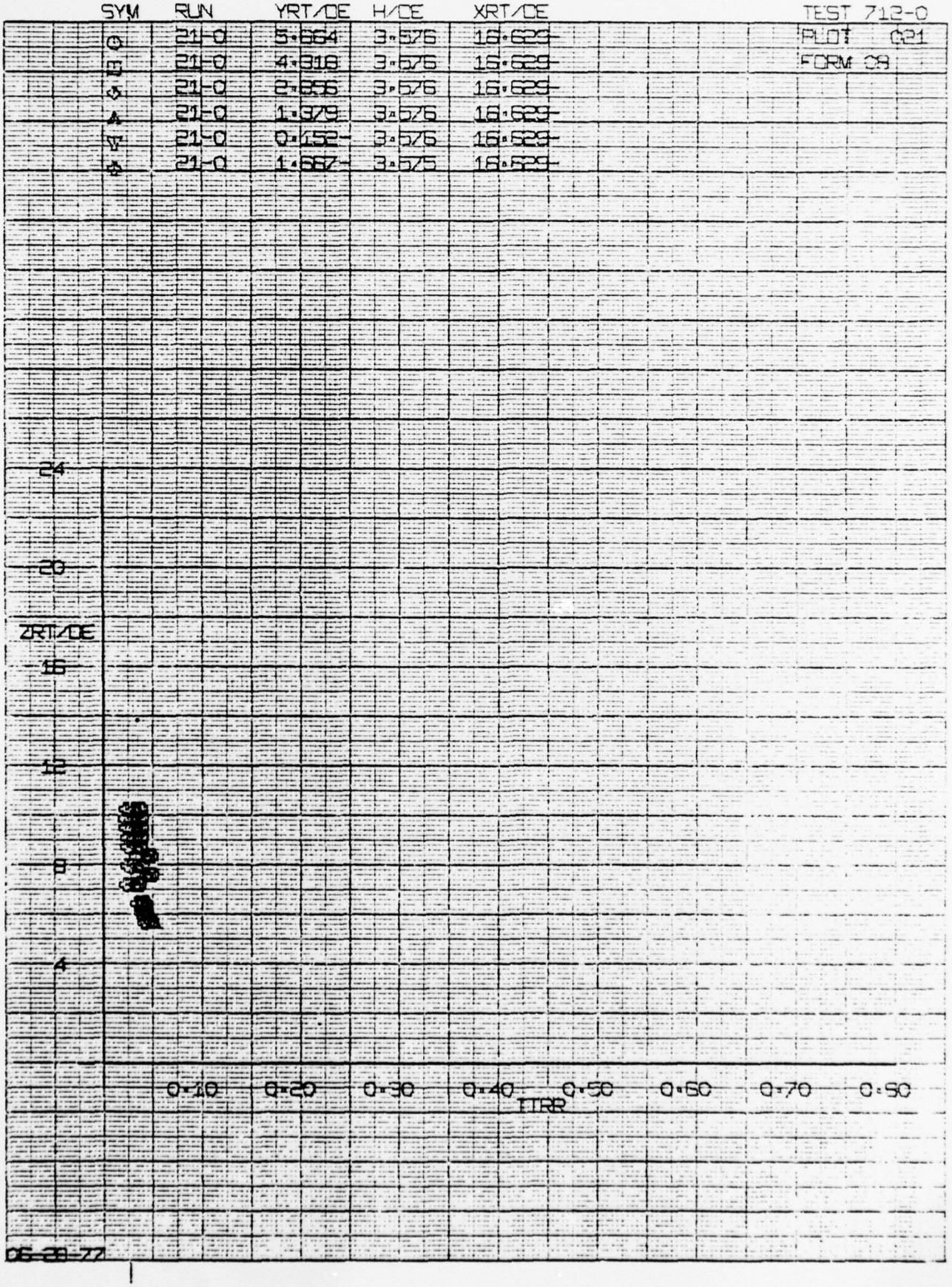
TEST 712-0
PLOT 020
FORM 08



06-28-77

SYM	RUN	YRT/DE	H/CE	XRT/DE
⊕	21-0	5.664	3.576	16.629
□	21-0	4.318	3.576	16.629
◇	21-0	2.856	3.576	16.629
△	21-0	1.379	3.576	16.629
▽	21-0	0.152-	3.576	16.629
⊕	21-0	1.667-	3.575	16.629

TEST 712-0
PLOT C21
FORM 09

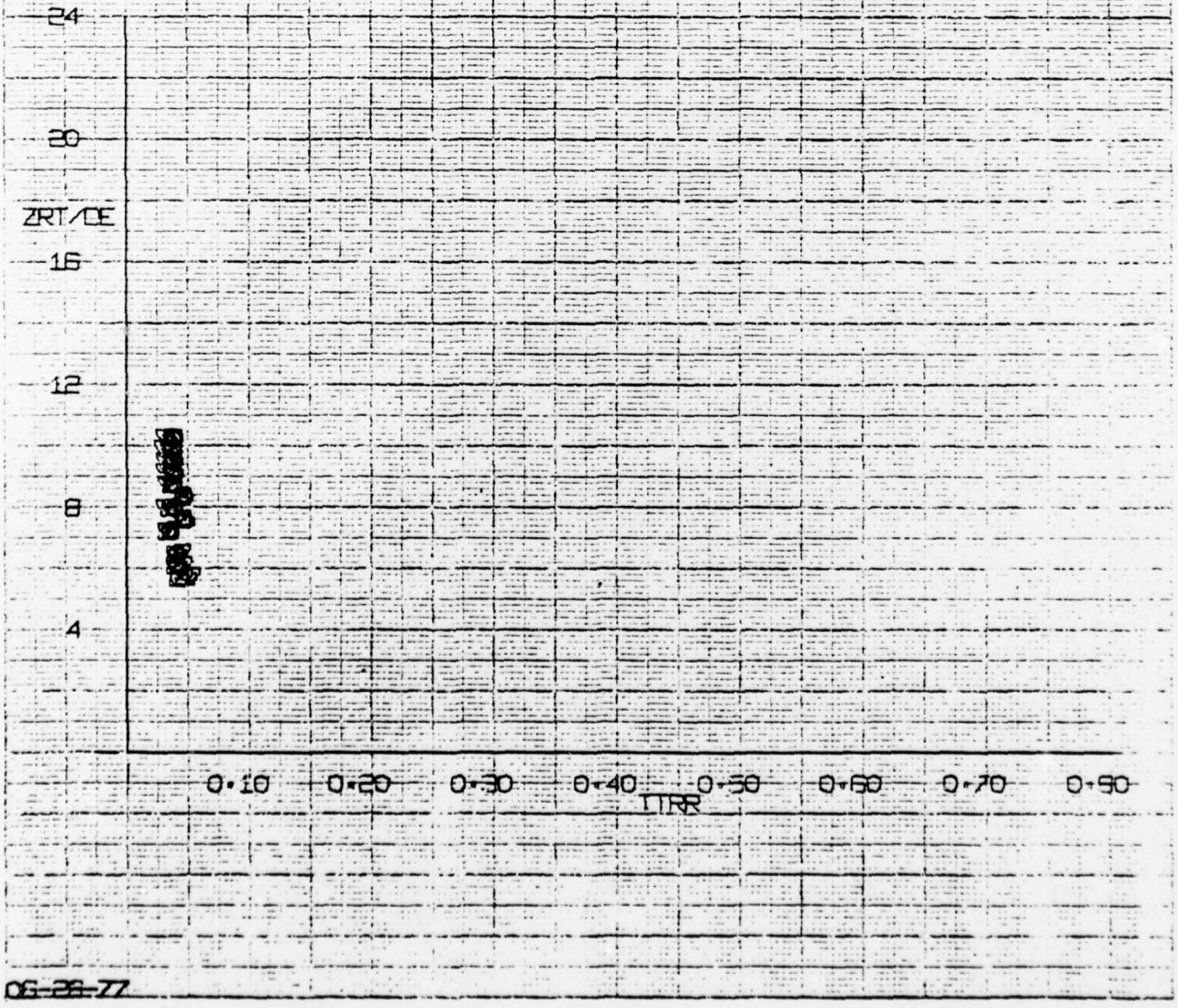


TEST 712-0

PLOT 022

FORM 06

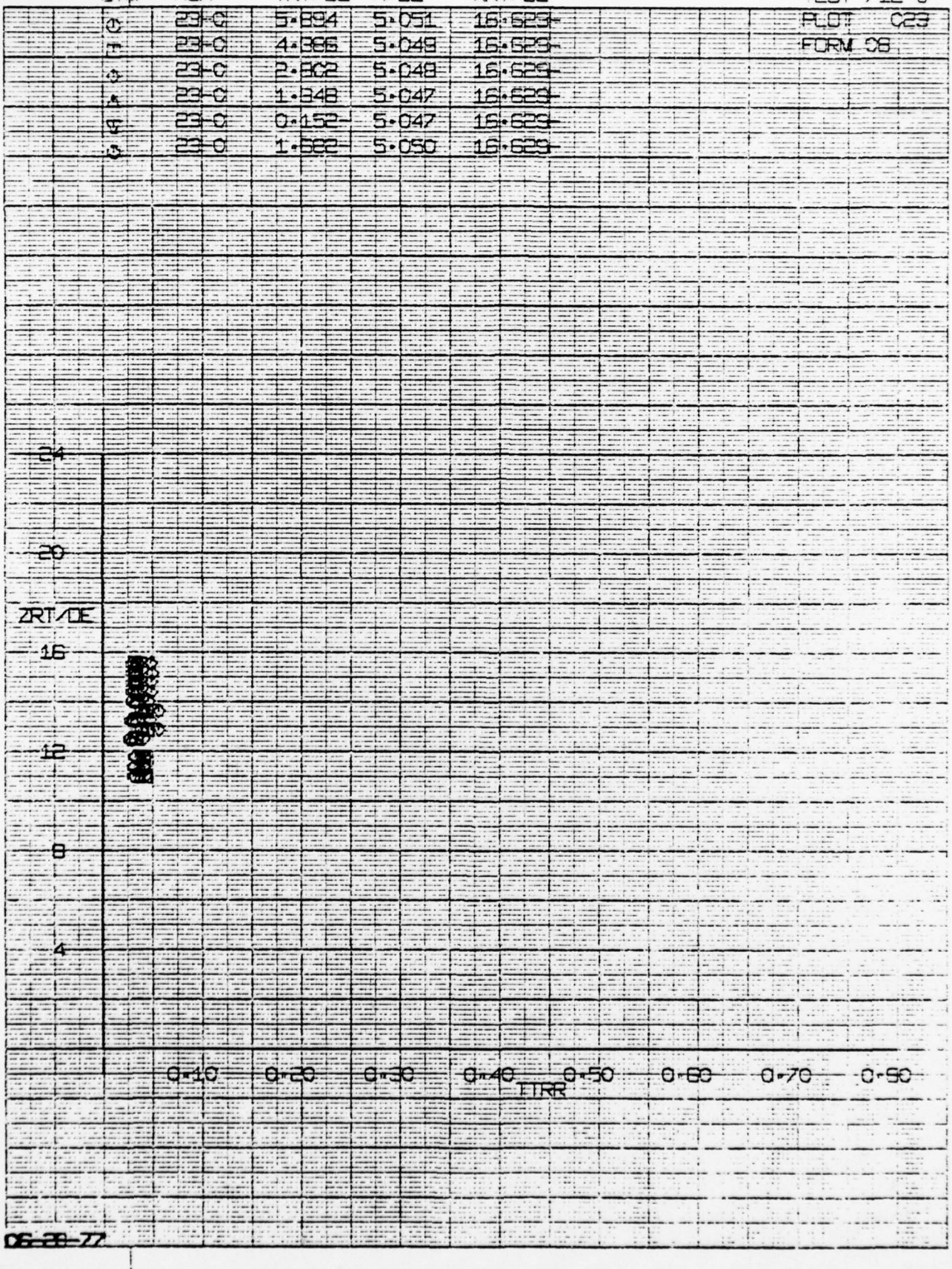
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	22-0	1.667	5.050	16.629
□	22-0	0.174	5.049	16.629
◇	22-0	1.303	5.048	16.629
△	22-0	2.902	5.047	16.629
▽	22-0	4.341	5.049	16.629
⬠	22-0	5.879	5.049	16.629



06-26-77

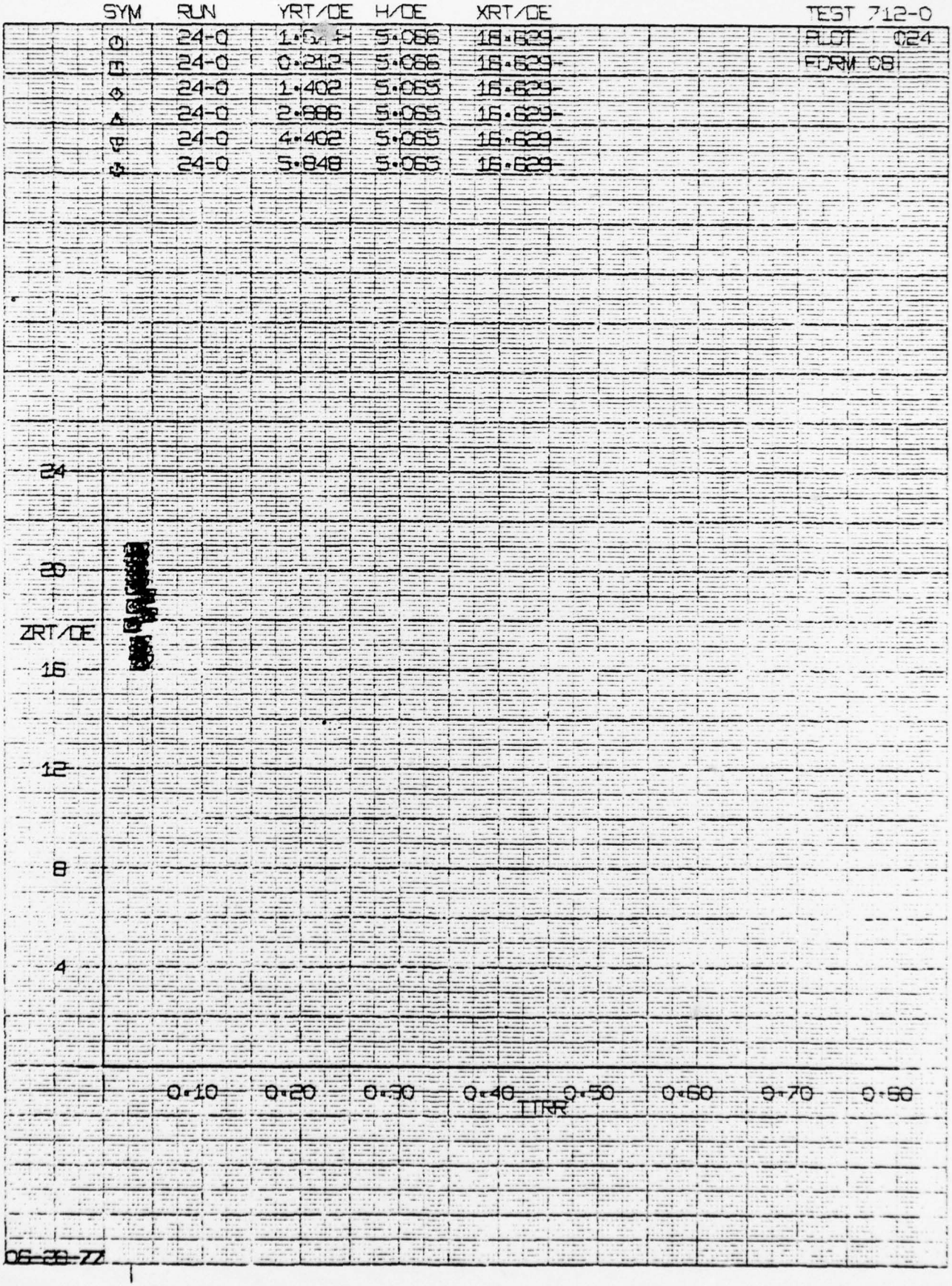
SYM	RUN	YRT/DE	H/DE	XRT/DE
①	23-C	5.894	5.051	16.623-
□	23-C	4.866	5.049	16.623-
◇	23-C	2.802	5.048	16.629-
△	23-C	1.348	5.047	16.629-
▽	23-C	0.152-	5.047	16.623-
⑤	23-C	1.582-	5.050	16.629-

TEST 712-C
PLOT C23
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	24-0	1.6[illegible]	5.066	18.629-
□	24-0	0.212	5.066	16.629-
◇	24-0	1.402	5.065	16.629-
△	24-0	2.986	5.065	16.629-
▽	24-0	4.402	5.065	16.629-
☆	24-0	5.848	5.065	16.629-

TEST 712-0
PLOT 024
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	25-0	5.864	5.064	16.623
□	25-0	4.235	5.063	16.623
◇	25-0	2.309	5.065	16.629
△	25-0	1.318	5.064	16.623
▽	25-0	0.474	5.063	16.629
☆	25-0	1.697	5.065	16.629

TEST 712-0
PLOT 025
FORM 08



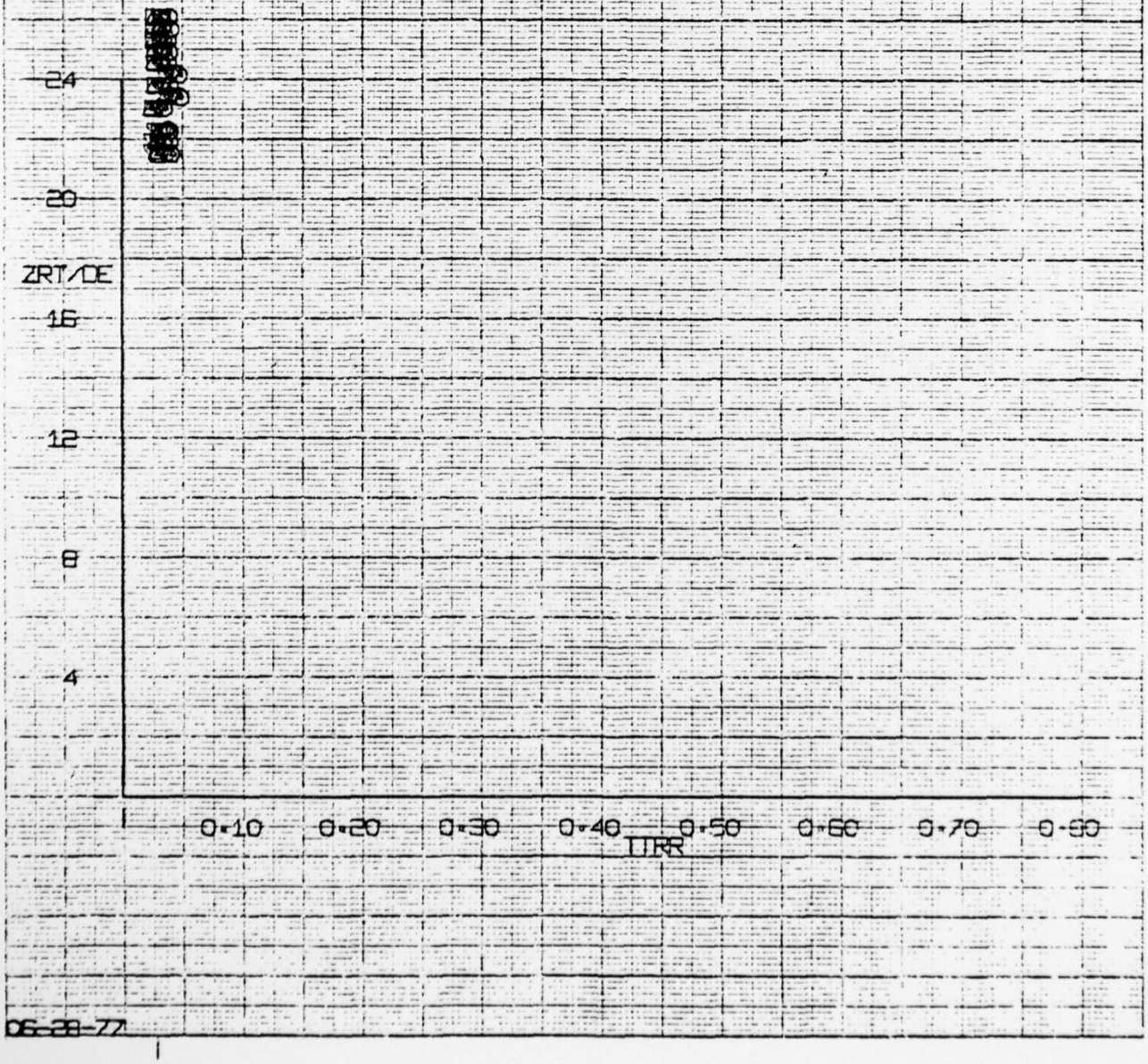
24
20
ZRT/DE
16
12
8
4

0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.90
TIRR

06-28-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	26-0	1.705-	8.093	16.629-
□	26-0	0.152-	8.090	16.629-
◇	26-0	1.348	8.090	16.629-
△	26-0	2.962	8.094	16.629-
▽	26-0	4.348	8.092	16.629-
☆	26-0	5.902	8.092	16.629-

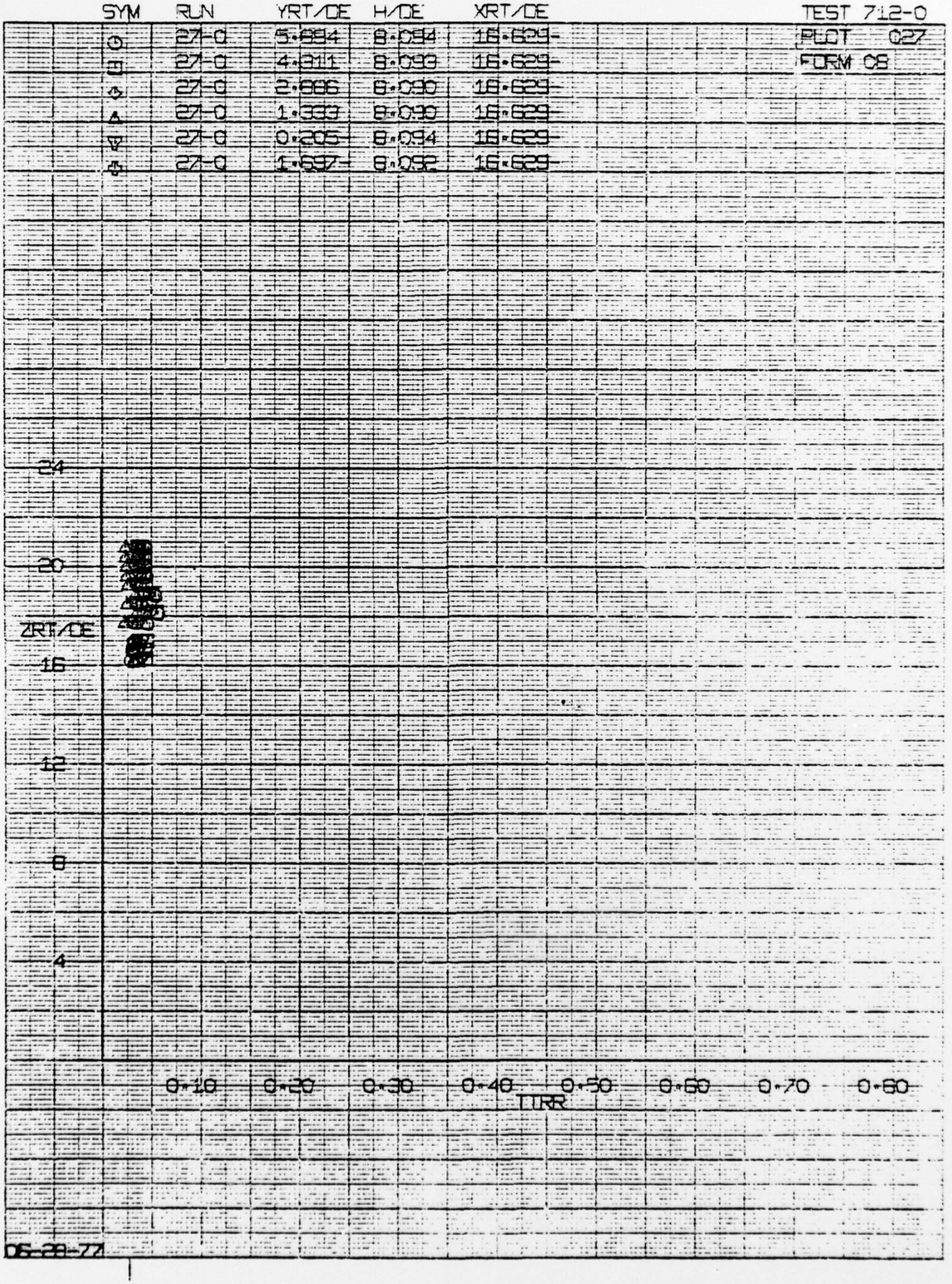
TEST 712-0
PLOT 026
FORM 08

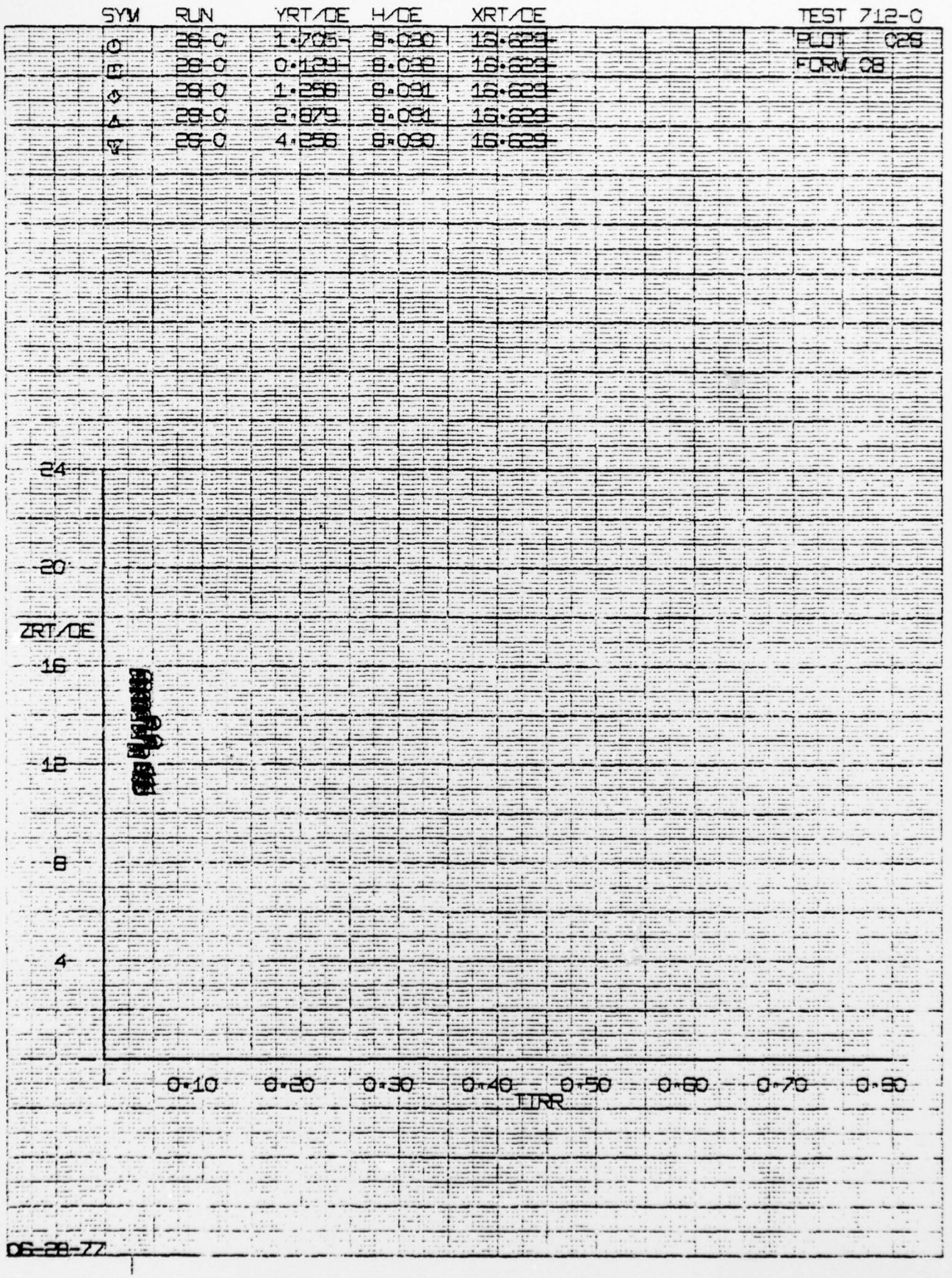


06-28-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	27-0	5.884	8.094	16.629
□	27-0	4.311	8.093	16.629
◇	27-0	2.886	8.090	16.629
△	27-0	1.333	8.090	16.629
▽	27-0	0.205	8.094	16.629
⌂	27-0	1.697	8.092	16.629

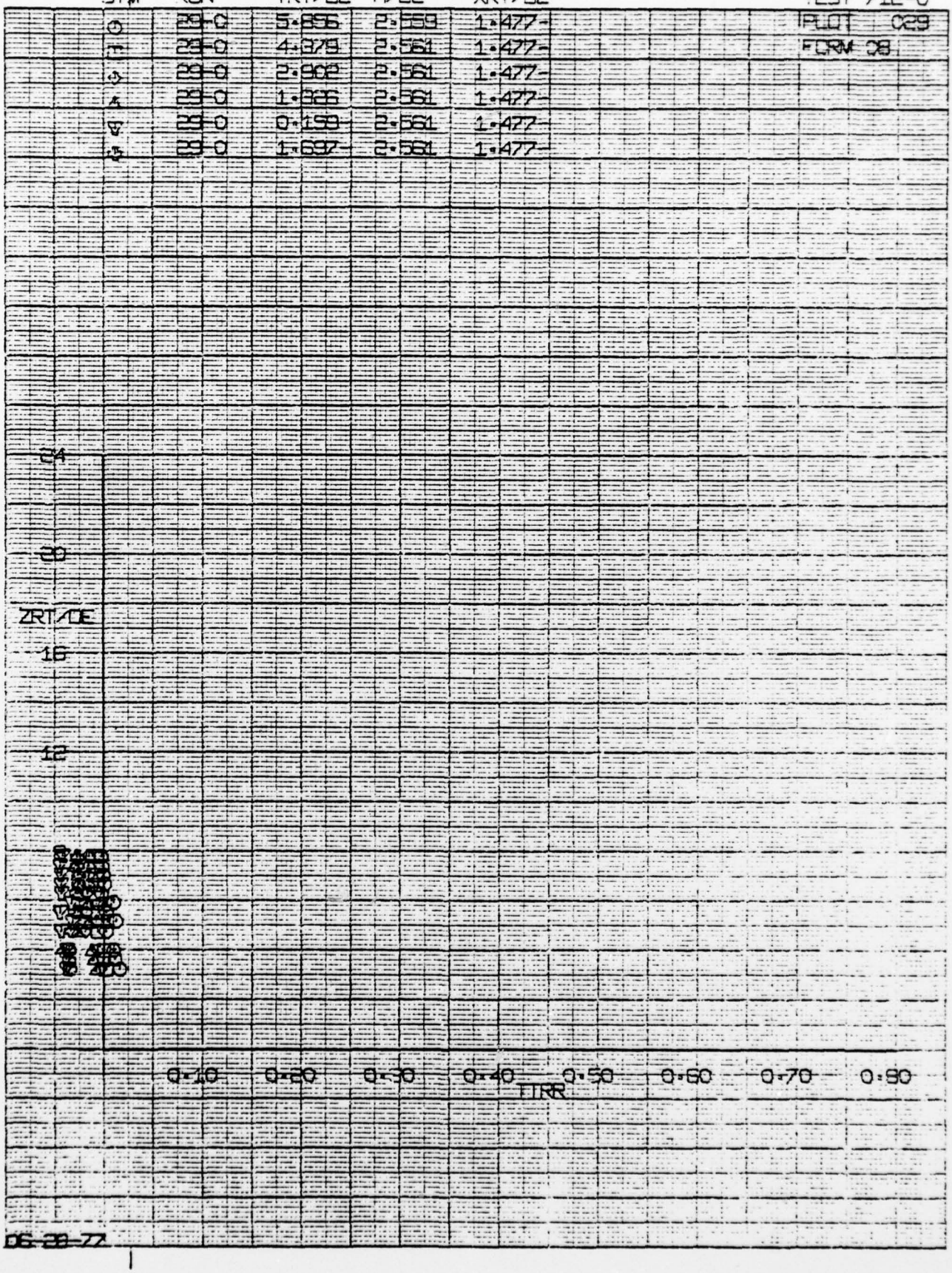
TEST 712-0
PLOT 027
FORM 08




SYM RUN YRT/DE H/DE XRT/DE
26-0 1.705 8.030 16.629
28-0 0.129 8.032 16.629
26-0 1.258 8.091 16.629
29-0 2.879 8.091 16.629
26-0 4.256 8.090 16.629
TEST 712-0
PLOT 028
FORM 08
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.90
TIRR
06-28-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	29-0	5.856	2.559	1.477-
□	29-0	4.379	2.561	1.477-
◇	29-0	2.902	2.561	1.477-
△	29-0	1.306	2.561	1.477-
▽	29-0	0.159-	2.561	1.477-
⬠	29-0	1.697-	2.561	1.477-

TEST 712-0
PLOT 029
FORM 08



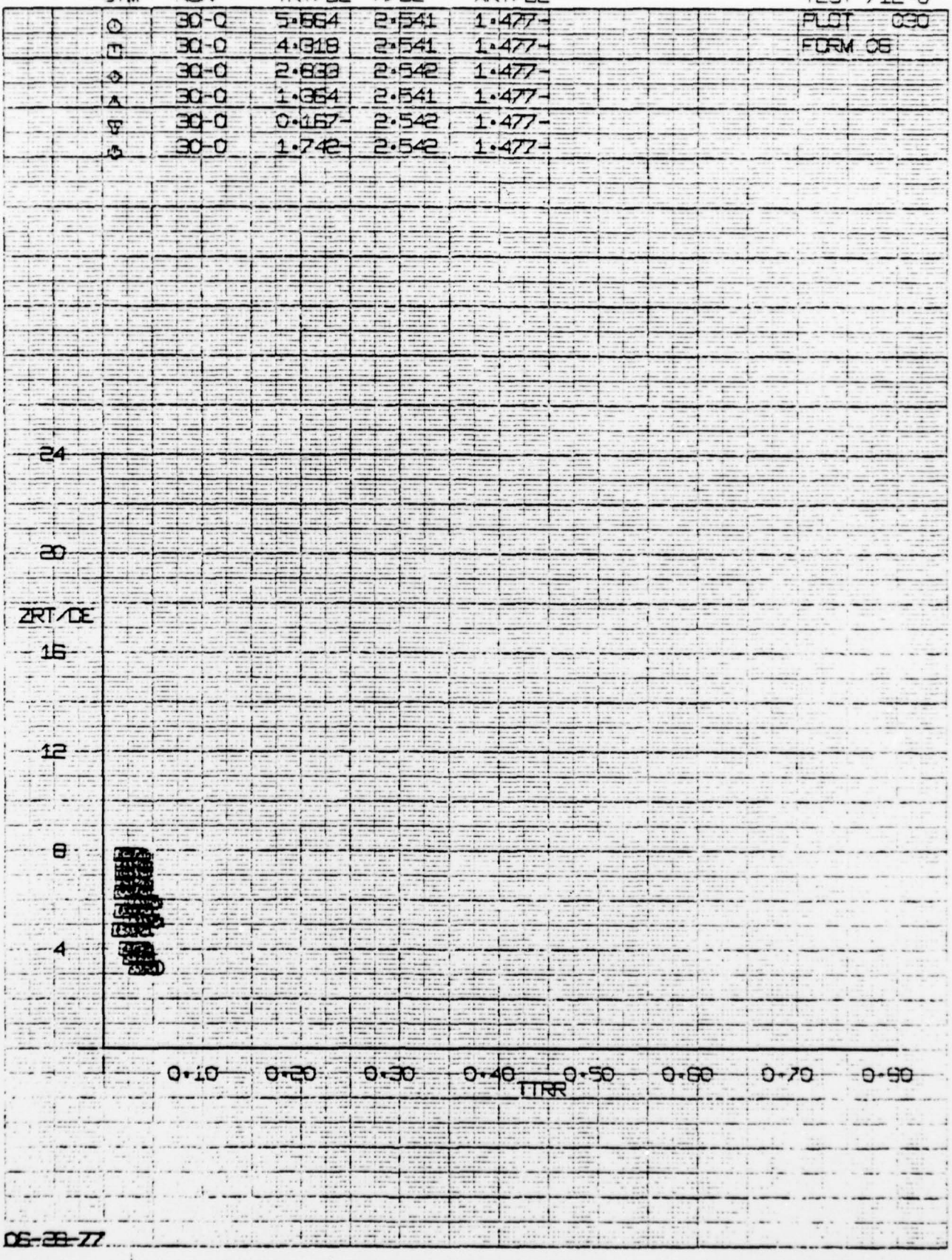
06-28-77

TEST 712-0

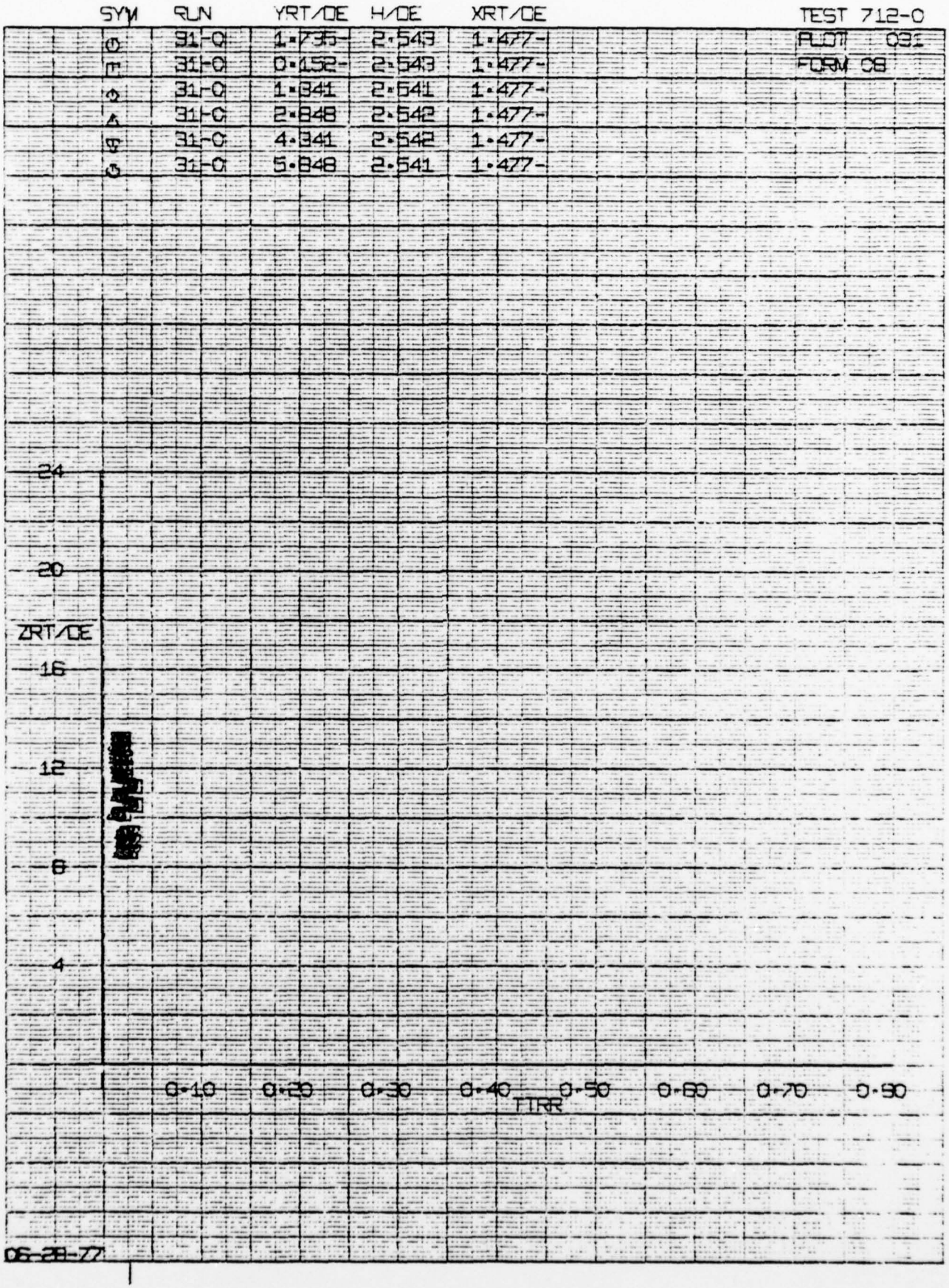
PLOT 030

FORM 06

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	30-0	5.564	2.541	1.477
□	30-0	4.618	2.541	1.477
◇	30-0	2.633	2.542	1.477
△	30-0	1.364	2.541	1.477
▽	30-0	0.167	2.542	1.477
⬠	30-0	1.742	2.542	1.477

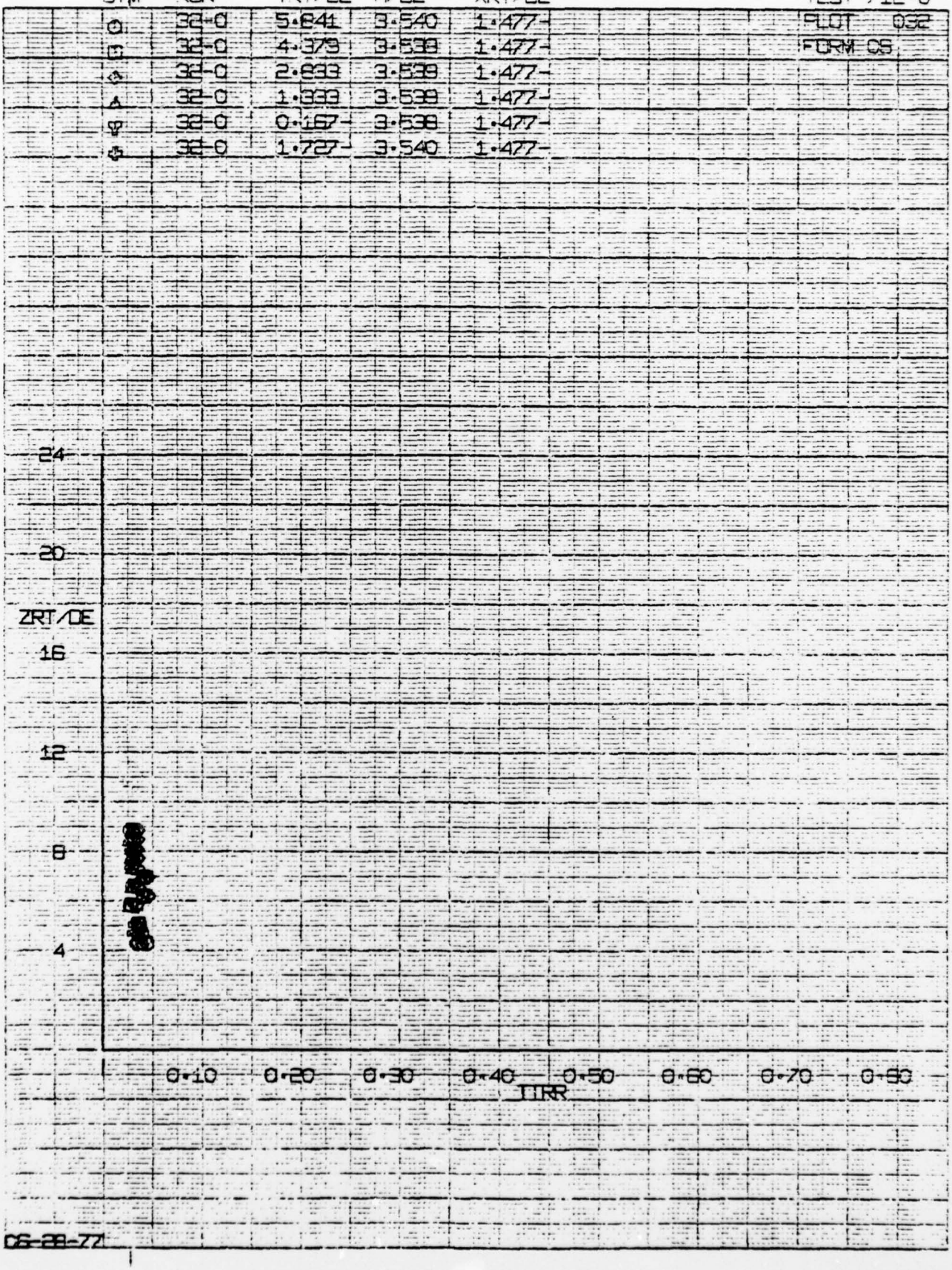


06-28-77


SYM RUN YRT/DE H/DE XRT/DE
TEST 712-0
PLOT 031
FORM 08
31-0 1.735- 2.543 1.477-
31-0 0.152- 2.543 1.477-
31-0 1.341 2.541 1.477-
31-0 2.848 2.542 1.477-
31-0 4.341 2.542 1.477-
31-0 5.848 2.541 1.477-
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.90
TIRR
06-28-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	32-0	5.841	3.540	1.477
□	32-0	4.379	3.539	1.477
◇	32-0	2.933	3.539	1.477
△	32-0	1.333	3.539	1.477
▽	32-0	0.167	3.538	1.477
⌖	32-0	1.727	3.540	1.477

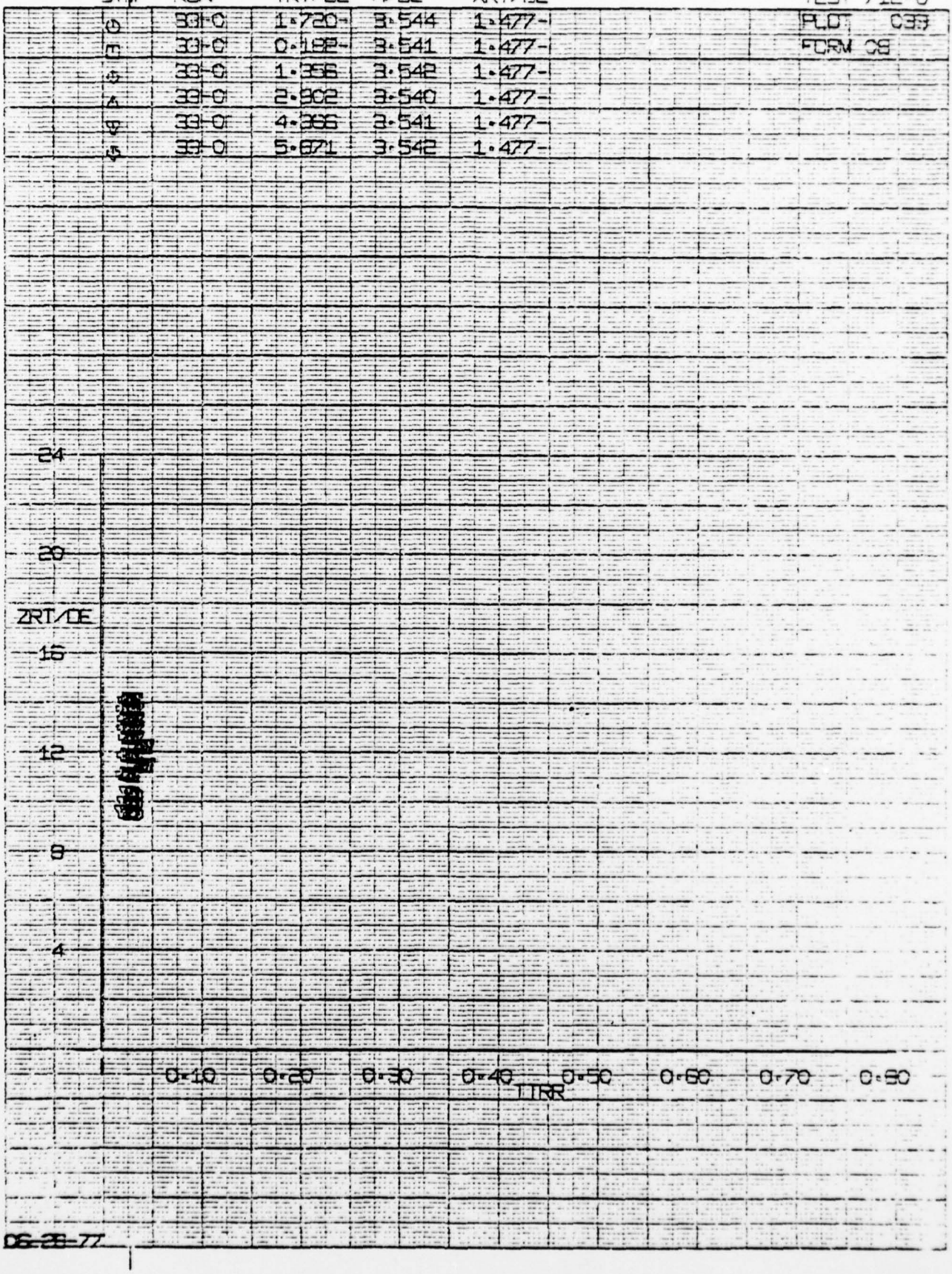
TEST 712-0
PLOT 032
FORM 05



06-28-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
◇	33-01	1.720-	3.544	1.477-
□	33-01	0.182-	3.541	1.477-
◇	33-01	1.356	3.542	1.477-
△	33-01	2.902	3.540	1.477-
▽	33-01	4.366	3.541	1.477-
◇	33-01	5.871	3.542	1.477-

TEST 712-0
PLOT C33
FORM 08



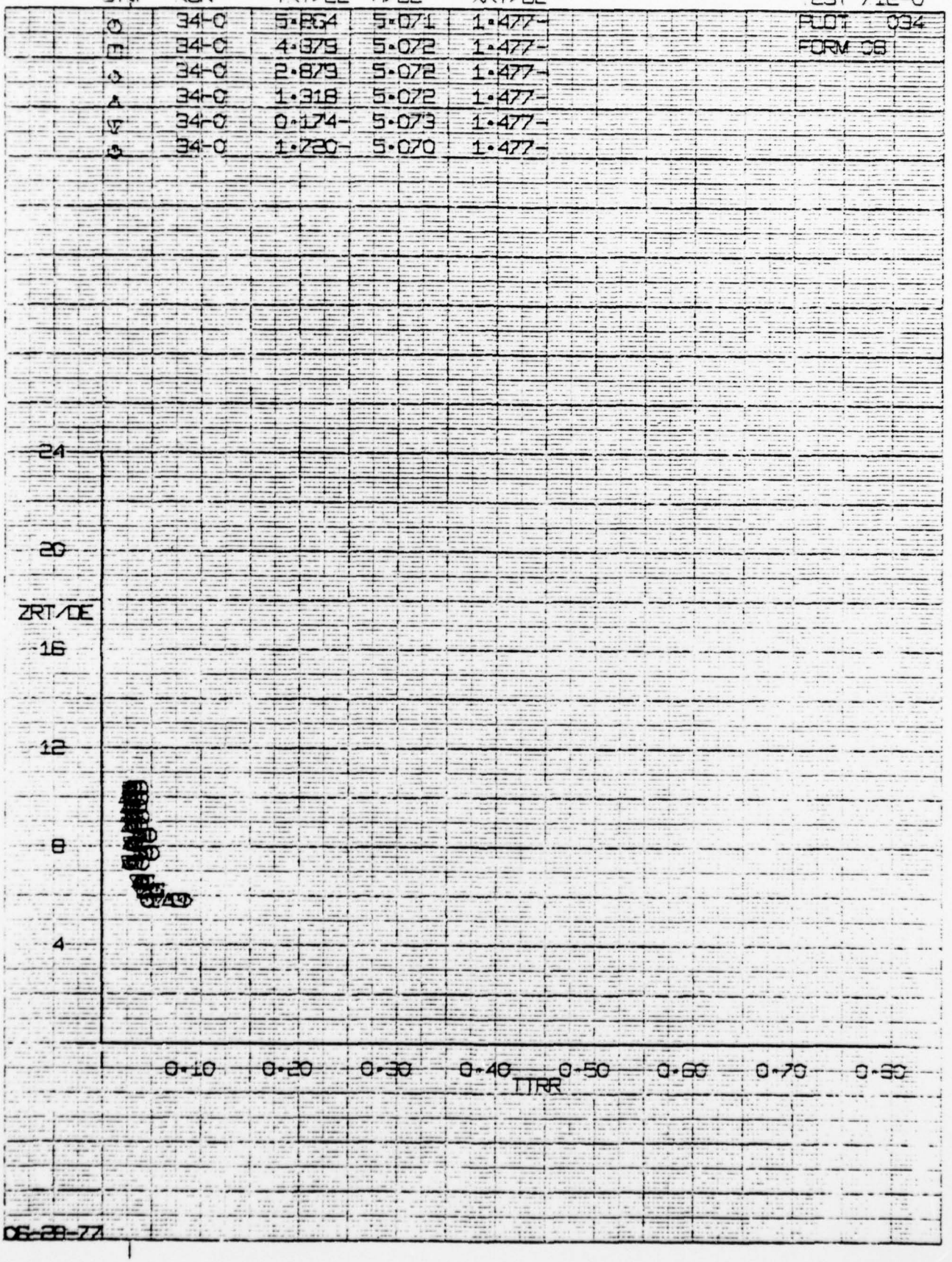
06-28-77

TEST 712-0

PLOT 034

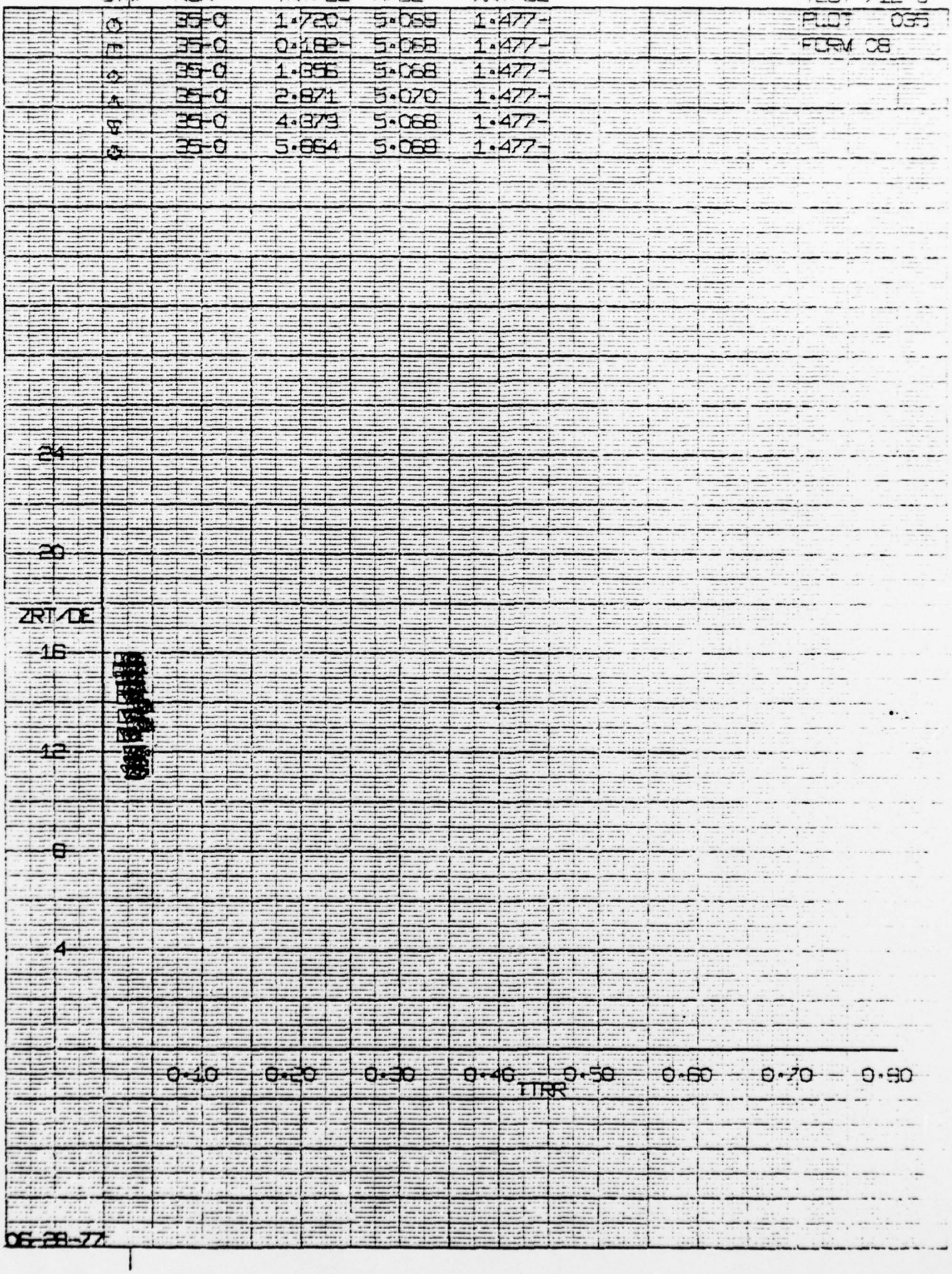
FORM 08

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	34-0	5.864	5.071	1.477-
□	34-0	4.379	5.072	1.477-
◇	34-0	2.879	5.072	1.477-
△	34-0	1.318	5.072	1.477-
▽	34-0	0.174-	5.073	1.477-
◁	34-0	1.720-	5.070	1.477-



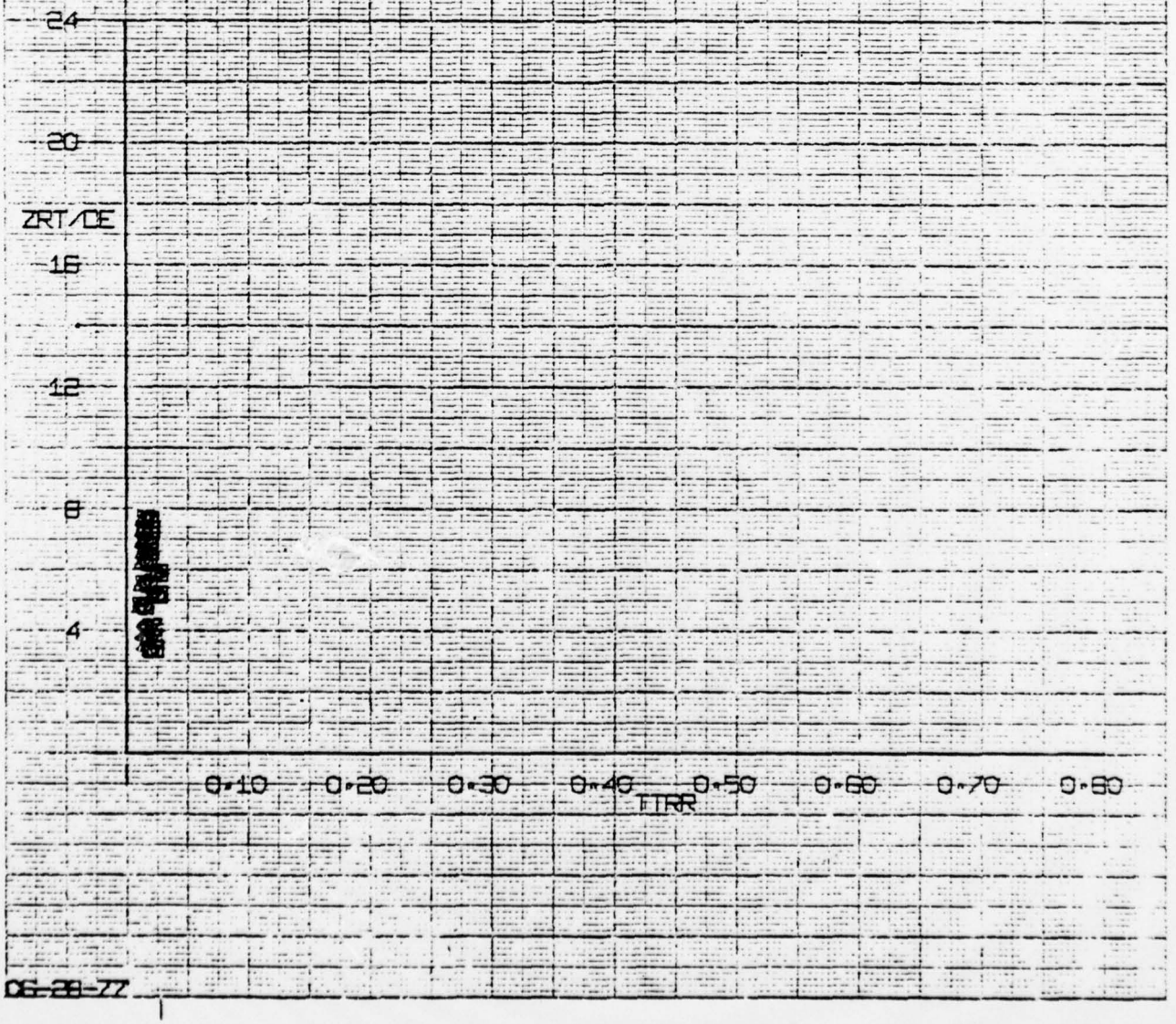
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	35-0	1.720-	5.068	1.477-
□	35-0	0.182-	5.068	1.477-
◇	35-0	1.856	5.068	1.477-
△	35-0	2.871	5.070	1.477-
▽	35-0	4.373	5.068	1.477-
⊙	35-0	5.864	5.068	1.477-

TEST 712-0
PLOT 035
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	36-0	1.667-	2.544	1.363-
□	36-0	0.184-	2.544	1.363-
◇	36-0	1.235	2.544	1.363-
△	36-0	2.660	2.544	1.363-
▽	36-0	4.028	2.544	1.363-
☆	36-0	5.482	2.544	1.363-

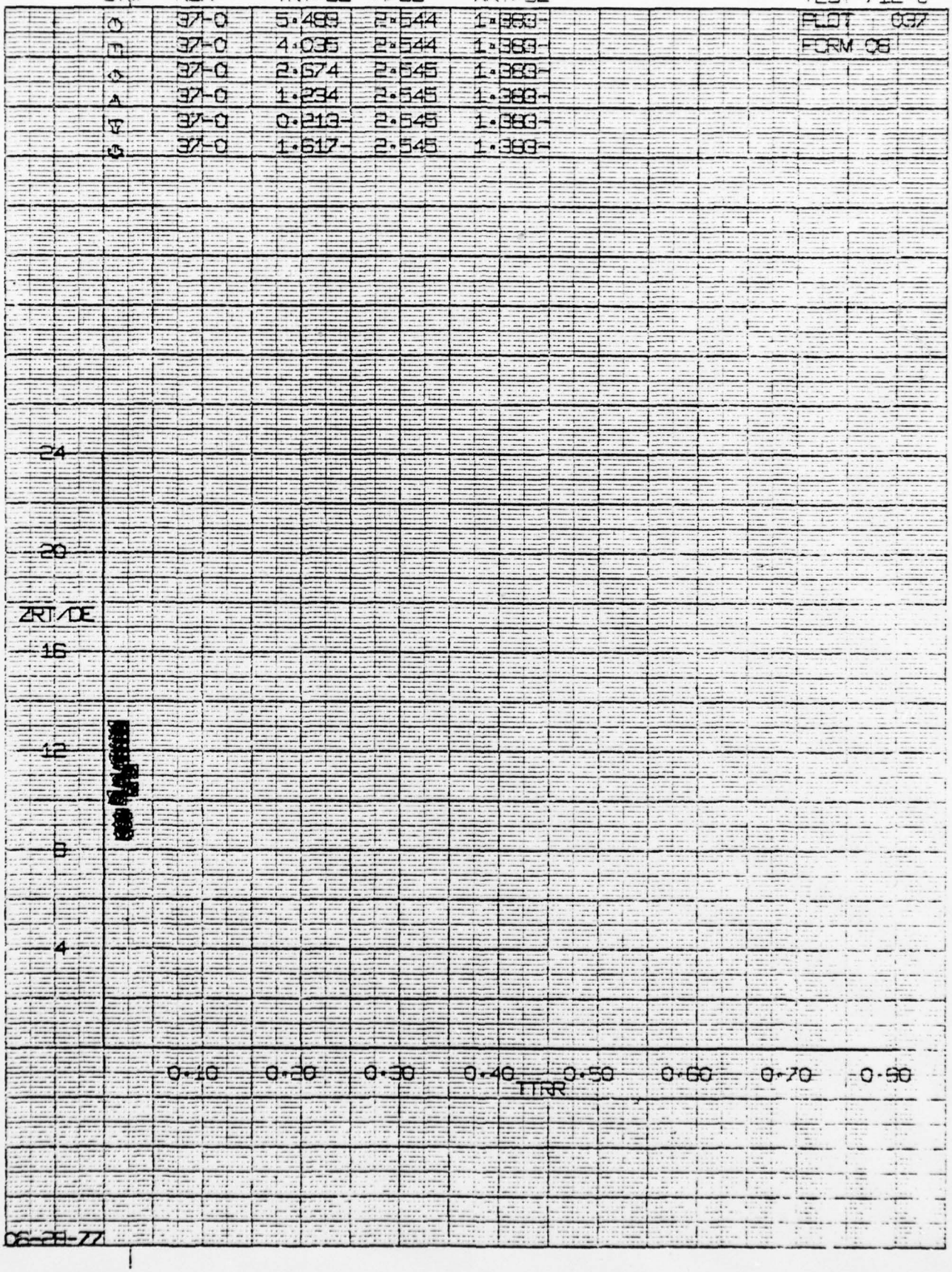
TEST 712-0
PLOT 036
FORM 08



06-28-77

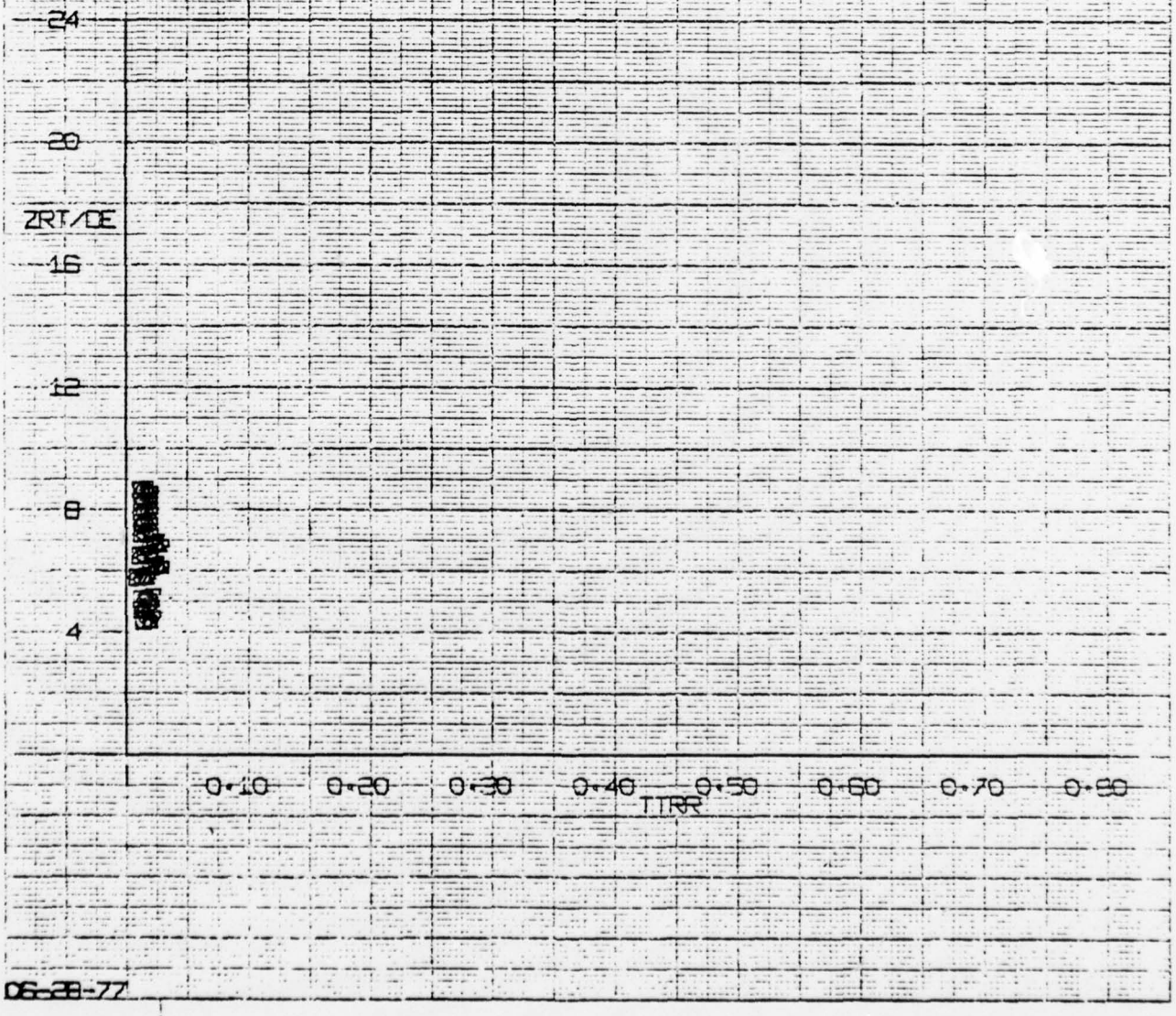
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	37-0	5.489	2.544	1.383-
□	37-0	4.035	2.544	1.383-
◇	37-0	2.674	2.545	1.383-
△	37-0	1.234	2.545	1.383-
▽	37-0	0.213-	2.545	1.383-
◁	37-0	1.617-	2.545	1.383-

TEST 712-0
PLOT 037
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	38-0	1.624	3.546	1.383
□	38-0	0.177	3.543	1.383
◇	38-0	1.277	3.543	1.383
△	38-0	2.731	3.544	1.383
▽	38-0	4.021	3.544	1.383
☆	38-0	5.489	3.544	1.383

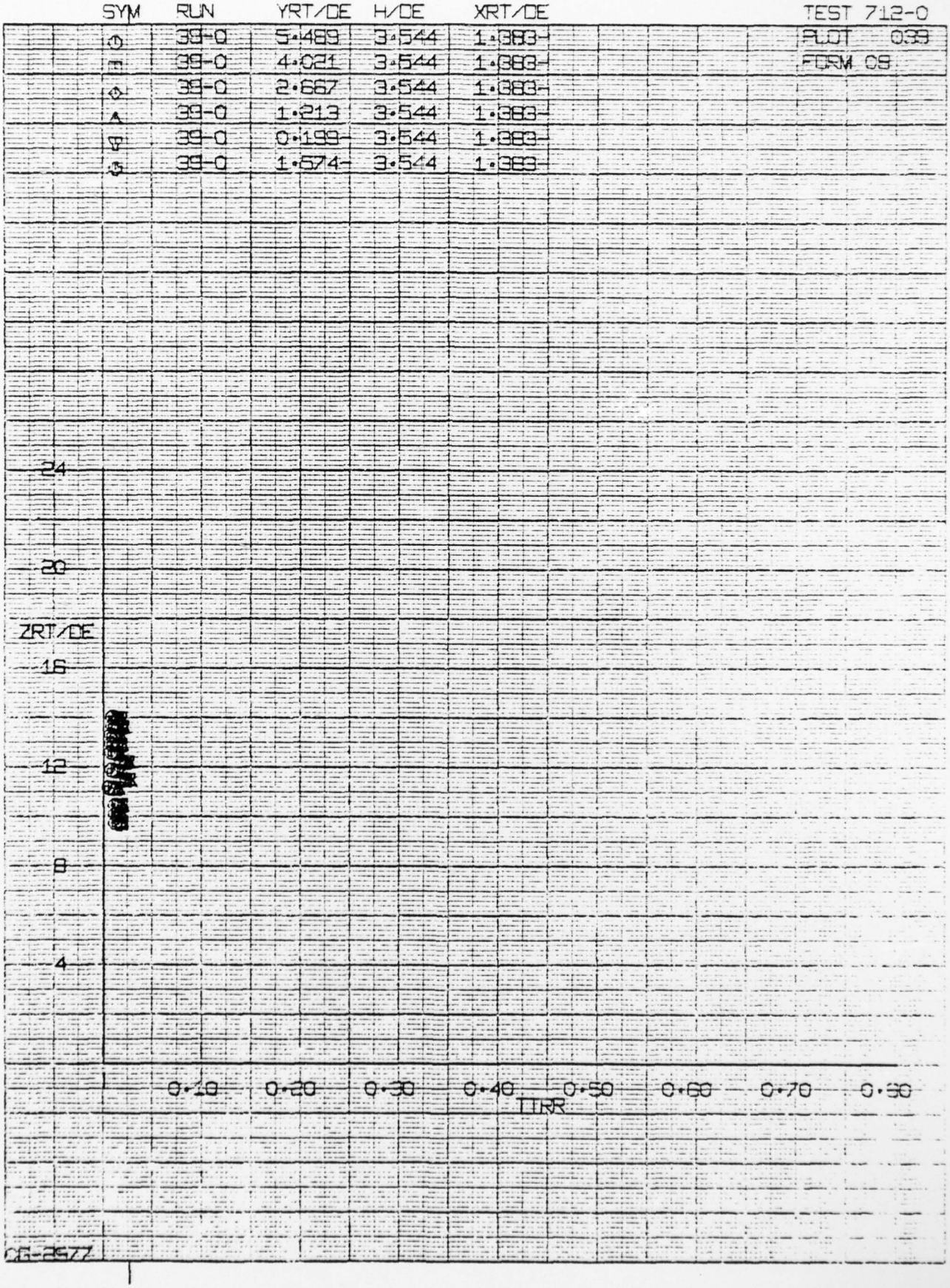
TEST 712-0
PLOT 038
FORM 08



06-28-77

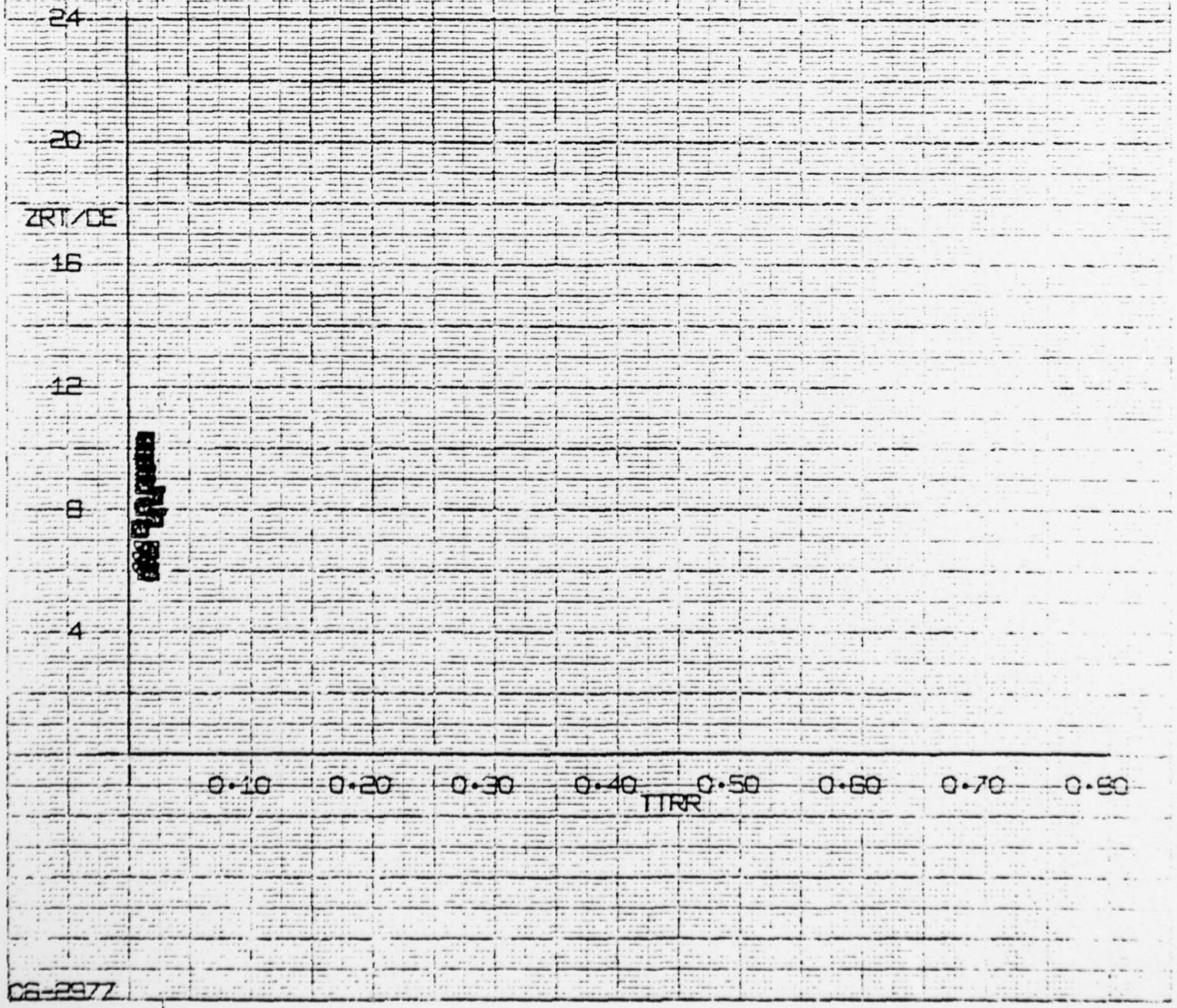
SYM	RUN	YRT/DE	H/DE	XRT/DE
◇	39-0	5.489	3.544	1.383-
□	39-0	4.021	3.544	1.383-
○	39-0	2.667	3.544	1.383-
△	39-0	1.213	3.544	1.383-
▽	39-0	0.199-	3.544	1.383-
◁	39-0	1.574-	3.544	1.383-

TEST 712-0
PLOT 039
FORM 09



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	40-0	1.582-	5.041	1.383-
□	40-0	0.184-	5.041	1.383-
◇	40-0	1.284	5.041	1.383-
△	40-0	2.688	5.041	1.383-
▽	40-0	4.057	5.041	1.383-
⬠	40-0	5.511	5.041	1.383-

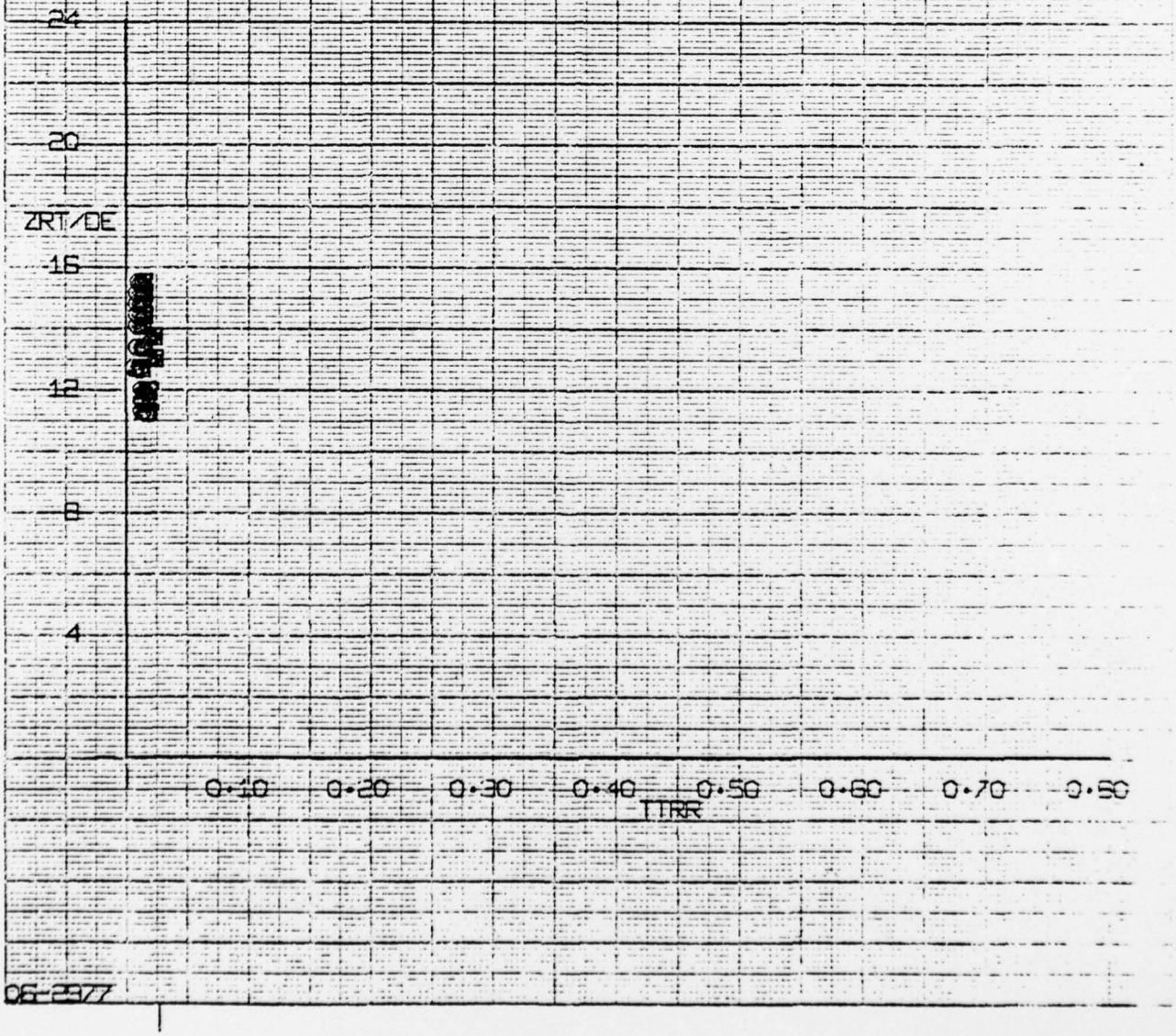
TEST 712-0
PLOT 040
FORM 05



C6-2977

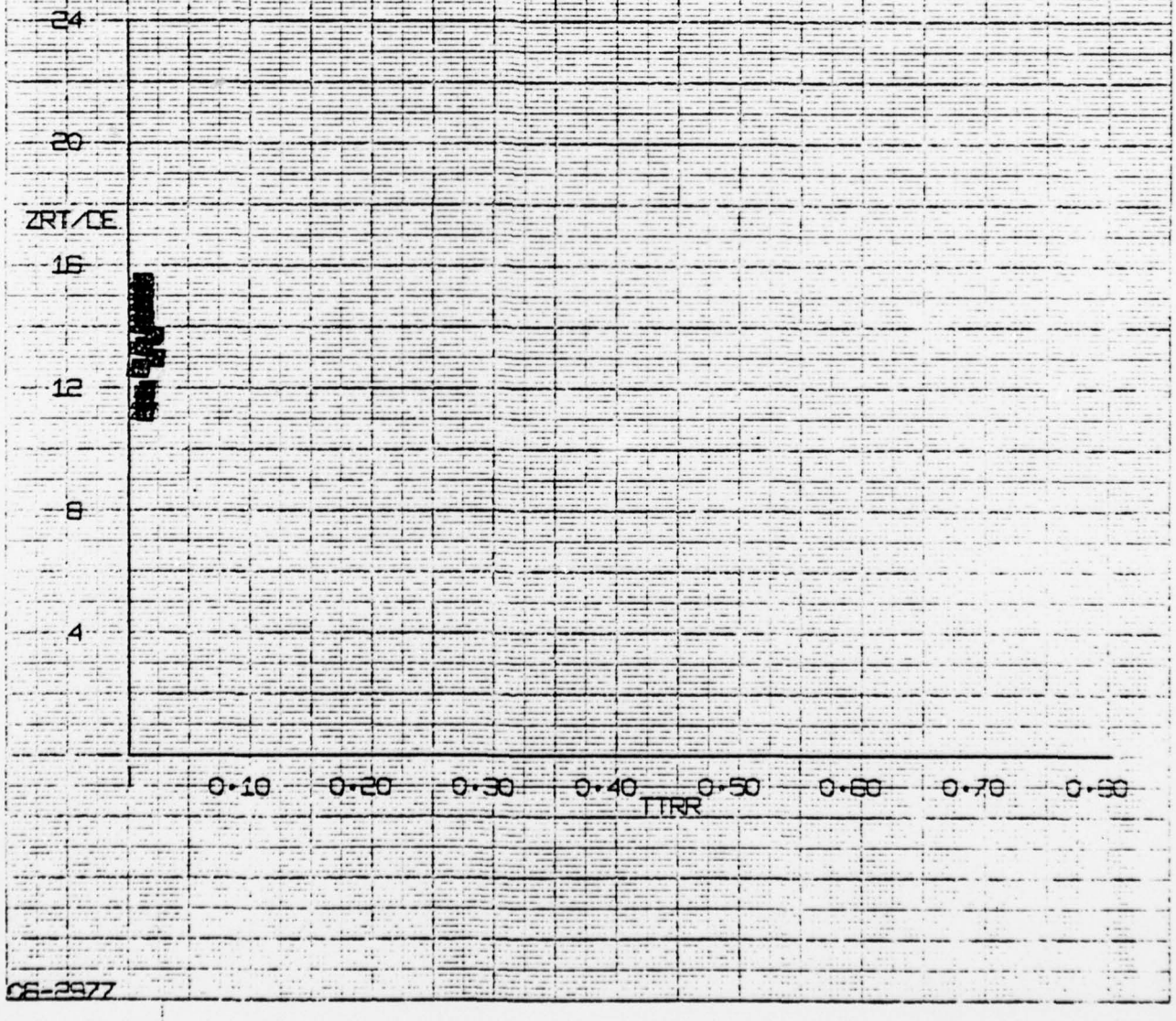
SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	41-0	5.518	5.041	1.383
□	41-0	4.035	5.041	1.383
◇	41-0	2.681	5.041	1.383
△	41-0	1.248	5.041	1.383
▽	41-0	0.184	5.041	1.383
⊙	41-0	1.589	5.041	1.383

TEST 712-0
PLOT 041
FORM 09



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	42-0	1.383-	8.040	1.383-
□	42-0	0.156-	8.040	1.383-
◇	42-0	1.298	8.040	1.383-
△	42-0	2.702	8.040	1.383-
▽	42-0	4.071	8.040	1.383-
⬡	42-0	5.489	8.040	1.383-

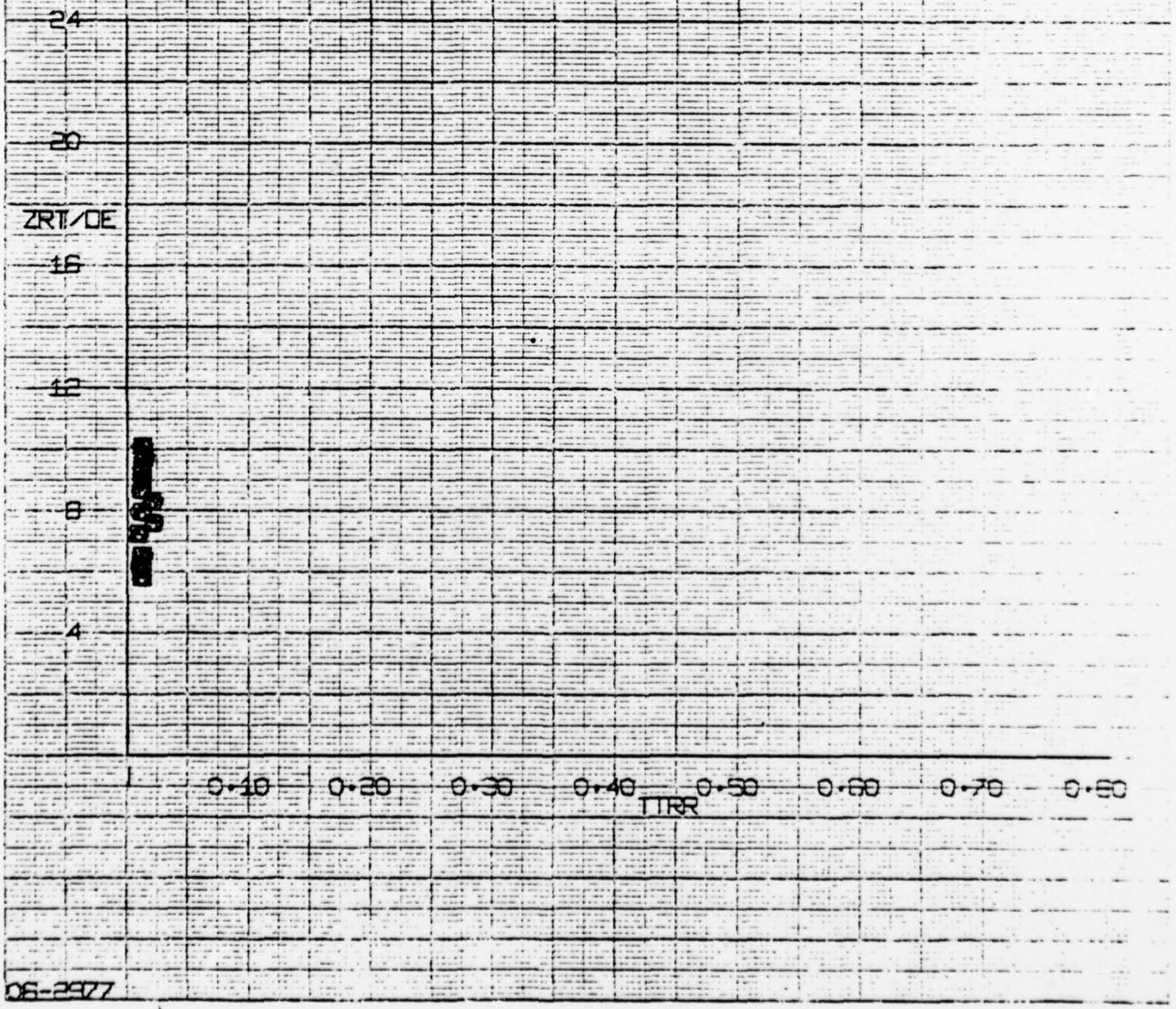
TEST 712-0
PLOT 042
FORM 09



06-2977

TEST 712-0
PLOT 043
FORM 09

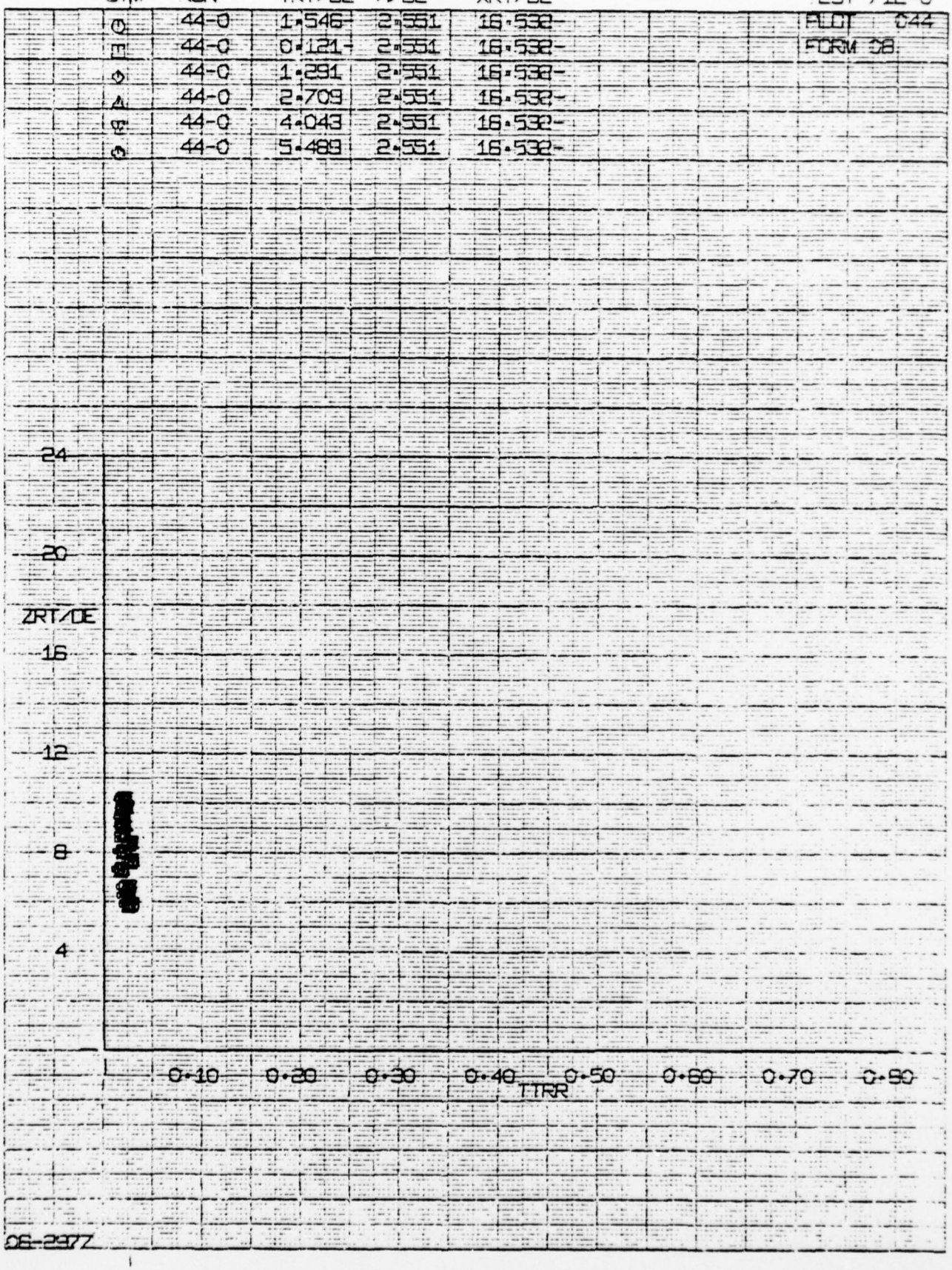
SYM	RUN	YRT/DE	H/DE	XRT/DE
⊕	43-0	5.475	8.040	1.383
⊞	43-0	4.092	8.040	1.383
◇	43-0	2.660	8.040	1.383
△	43-0	1.184	8.040	1.383
⊕	43-0	0.241	8.041	1.383
⊙	43-0	1.624	8.041	1.383



06-2977

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	44-0	1.546-	2.551	16.532-
□	44-0	0.121-	2.551	16.532-
◇	44-0	1.291	2.551	16.532-
△	44-0	2.709	2.551	16.532-
▽	44-0	4.043	2.551	16.532-
◁	44-0	5.489	2.551	16.532-

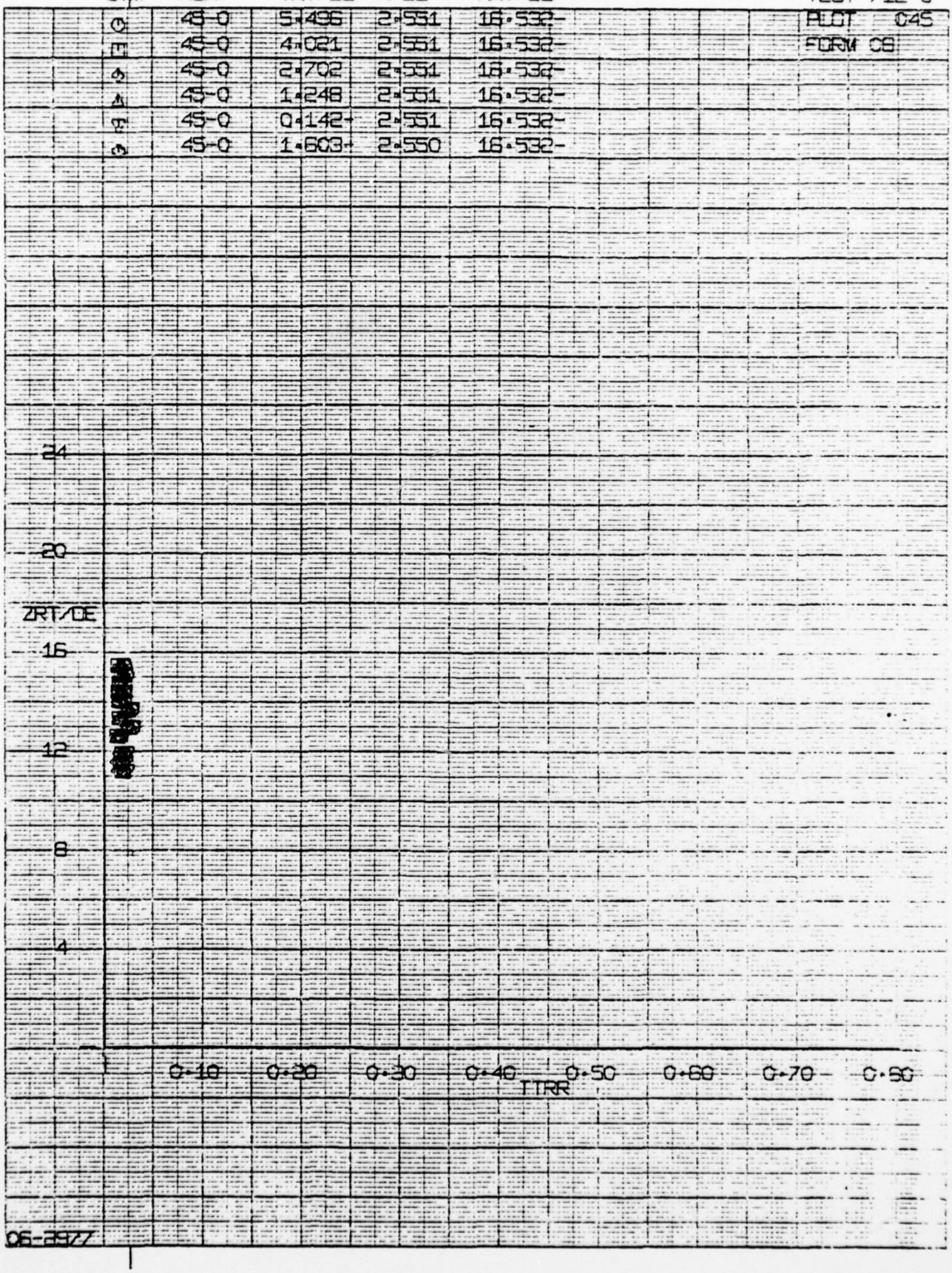
TEST 712-0
PLOT 044
FORM 08



06-2977

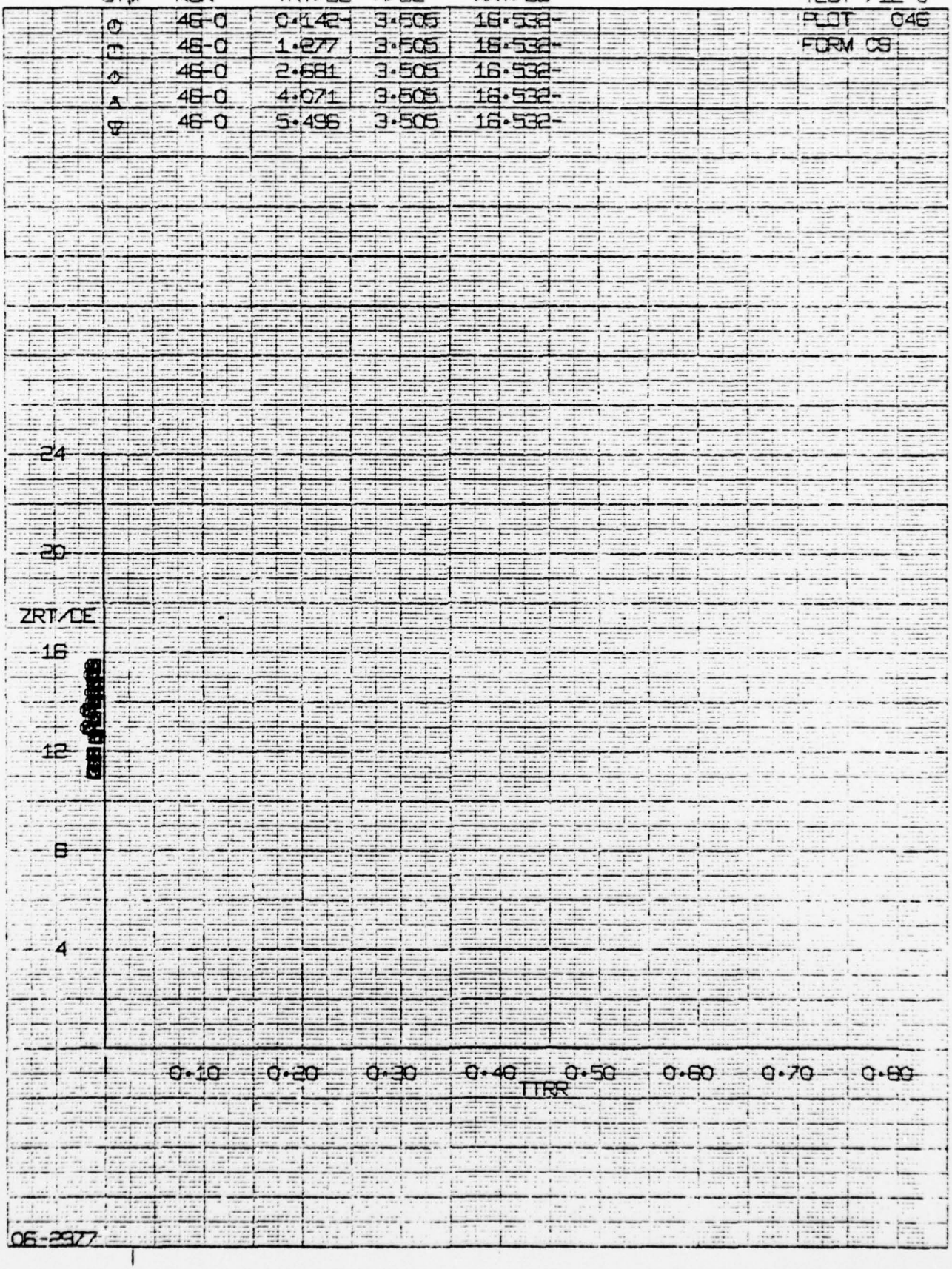
SYM	RUN	YRT/DE	H/DE	XRT/DE
C	45-0	5.496	2.551	16.532-
E	45-0	4.021	2.551	16.532-
A	45-0	2.702	2.551	16.532-
B	45-0	1.248	2.551	16.532-
D	45-0	0.142+	2.551	16.532-
F	45-0	1.603+	2.550	16.532-

TEST 712-0
PLOT 045
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	46-0	0.142-	3.505	16.532-
□	46-0	1.277	3.505	16.532-
◇	46-0	2.681	3.505	16.532-
△	46-0	4.071	3.505	16.532-
▽	46-0	5.496	3.505	16.532-

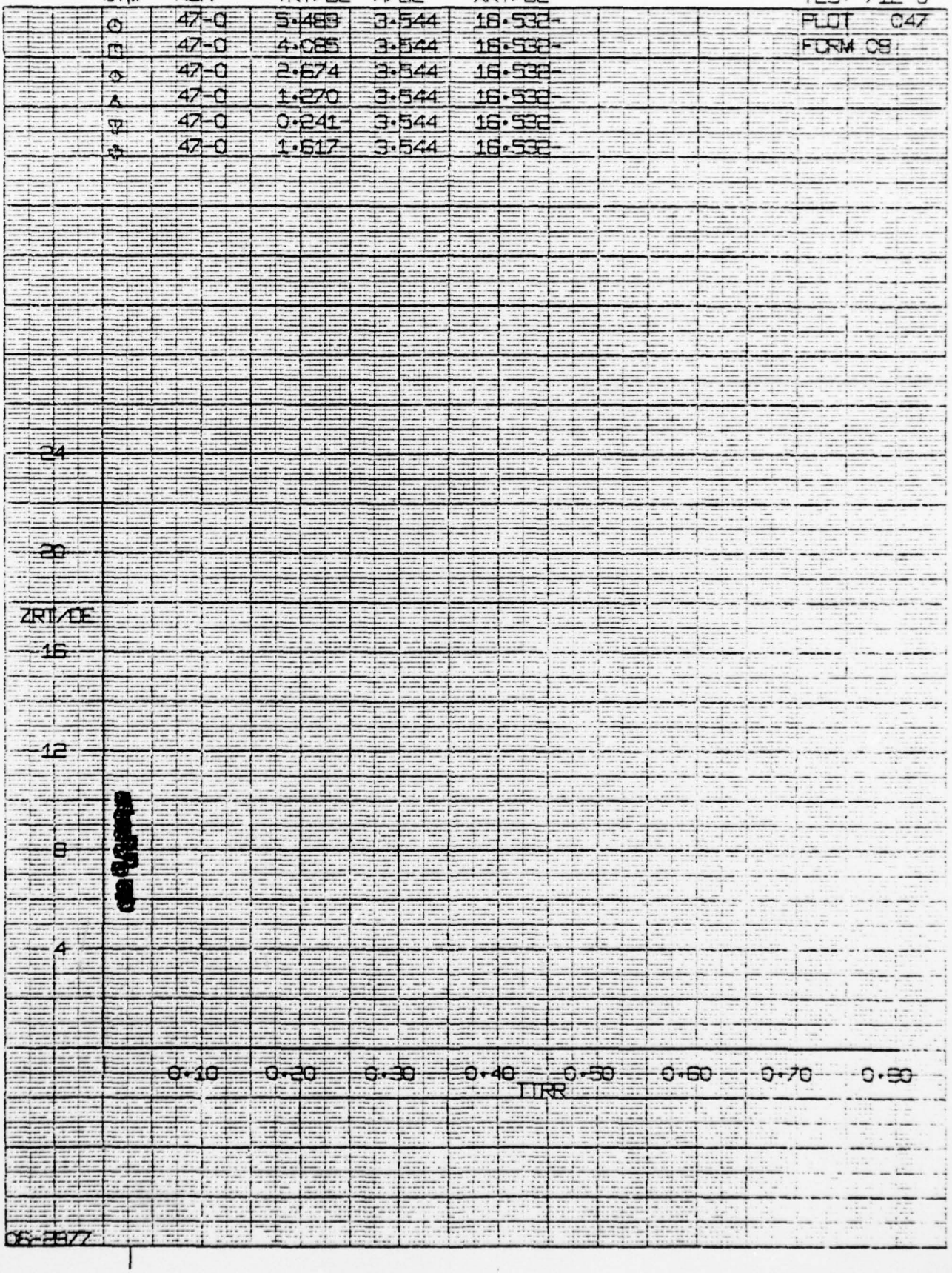
TEST 712-C
PLOT 046
FORM C9



06-2977

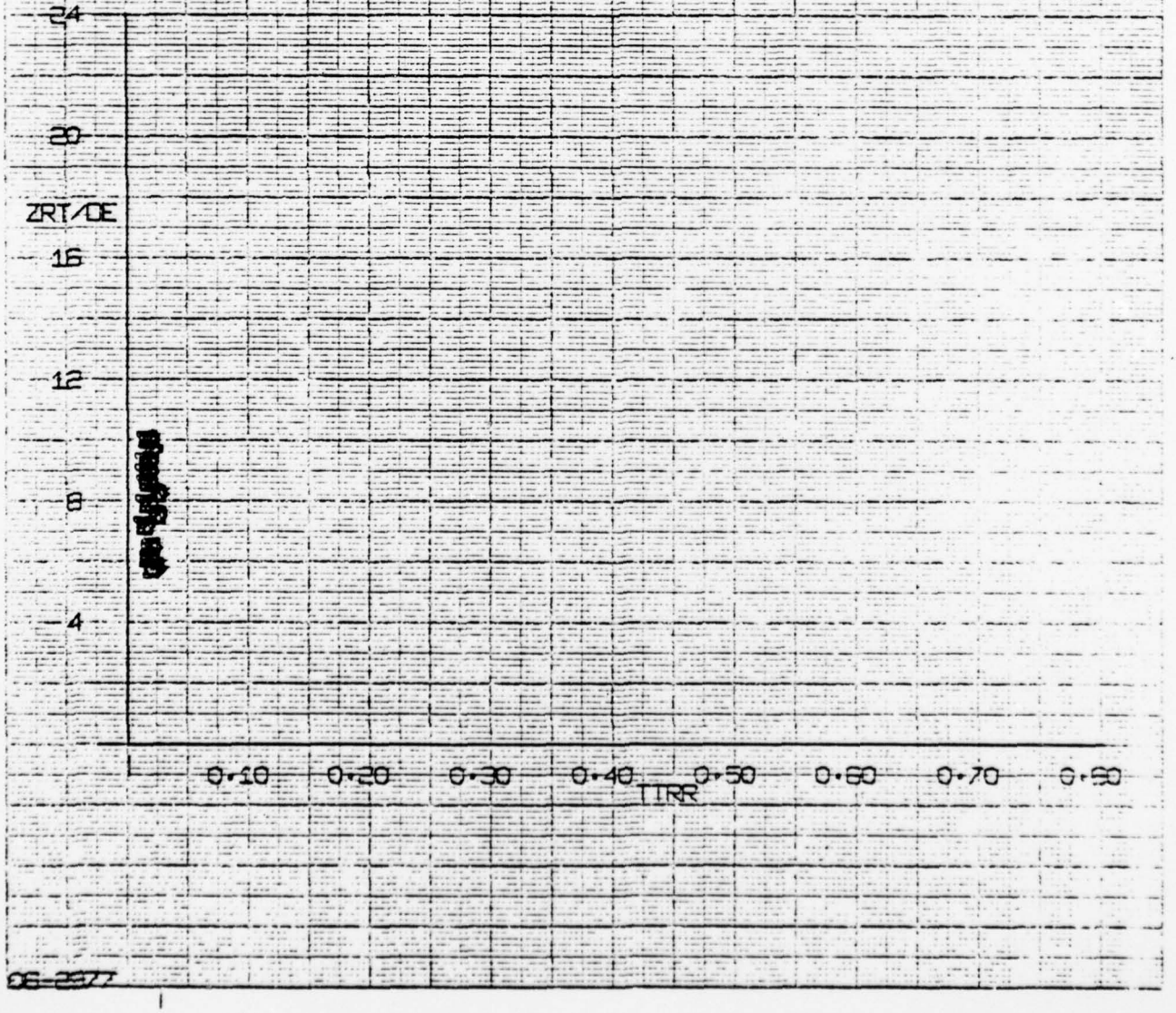
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	47-0	5.483	3.544	18.532
□	47-0	4.085	3.544	16.532
◇	47-0	2.674	3.544	16.532
△	47-0	1.270	3.544	16.532
▽	47-0	0.241	3.544	16.532
☆	47-0	1.617	3.544	16.532

TEST 712-0
PLOT C47
FORM C9



SYM	RUN	YRT/DE	H/DE	XRT/DE
◷	48-0	1.617-	5.047	16.532-
□	48-0	0.128-	5.047	16.532-
◷	48-0	1.270	5.047	16.532-
△	48-0	2.574	5.048	16.532-
▽	48-0	4.021	5.048	16.532-
◷	48-0	5.489	5.047	16.532-

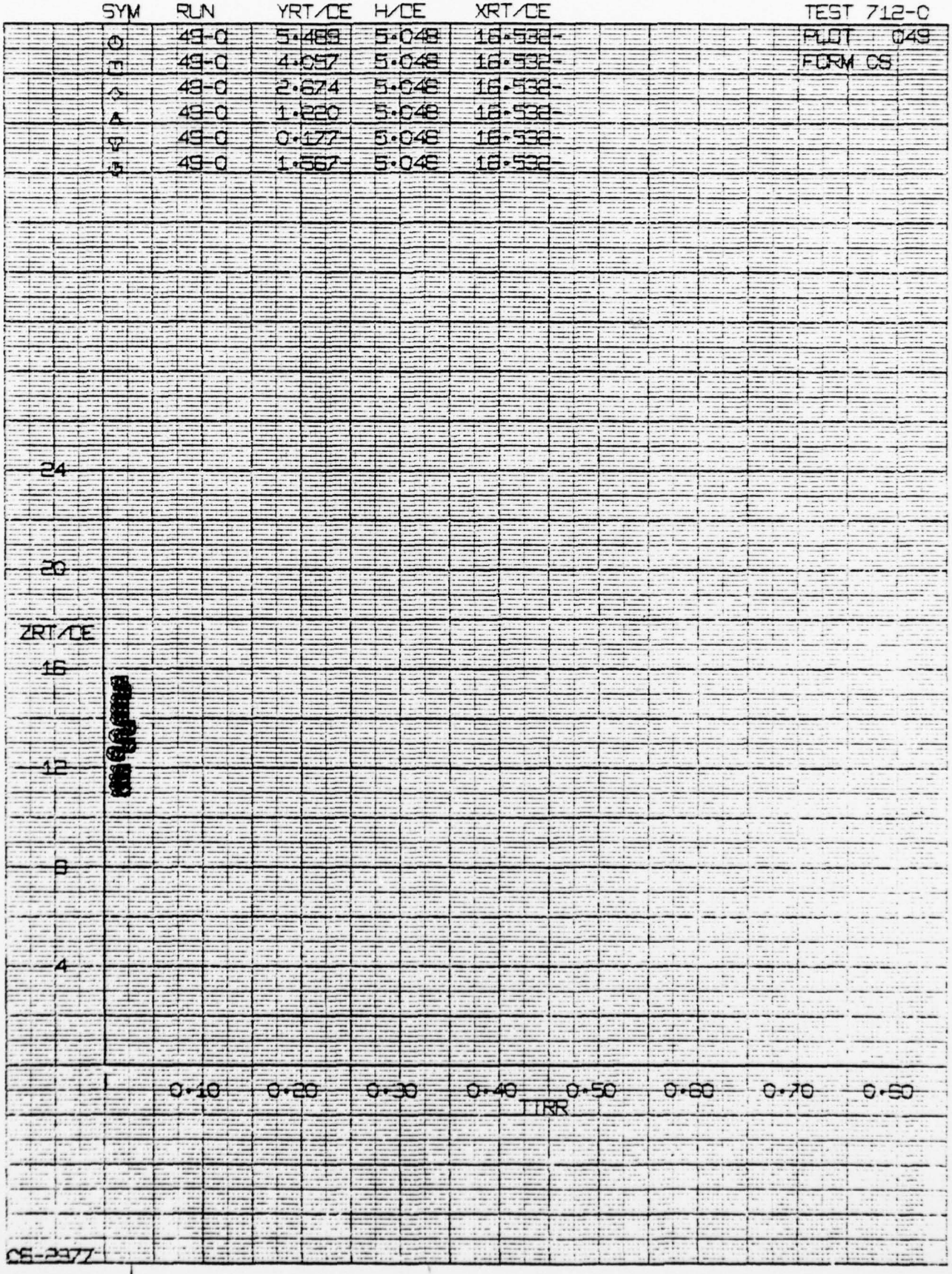
TEST 712-0
PLOT 049
FORM 08



06-2677

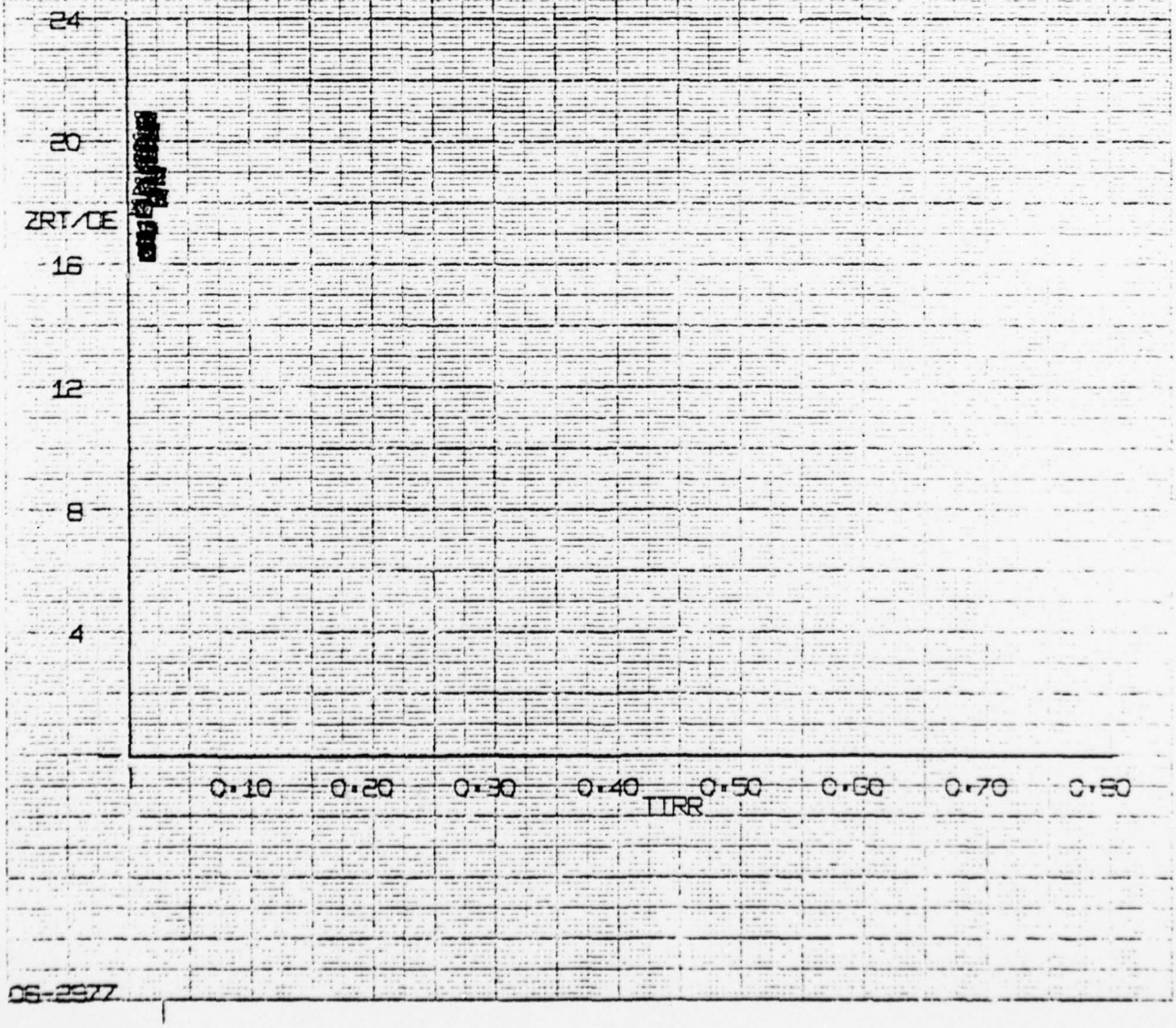
SYM	RUN	YRT/CE	H/CE	XRT/CE
○	49-0	5.489	5.048	16.532-
□	49-0	4.057	5.048	16.532-
◇	49-0	2.674	5.048	16.532-
△	49-0	1.220	5.048	16.532-
▽	49-0	0.177-	5.048	16.532-
⬠	49-0	1.567-	5.048	16.532-

TEST 712-0
PLOT 049
FORM CS

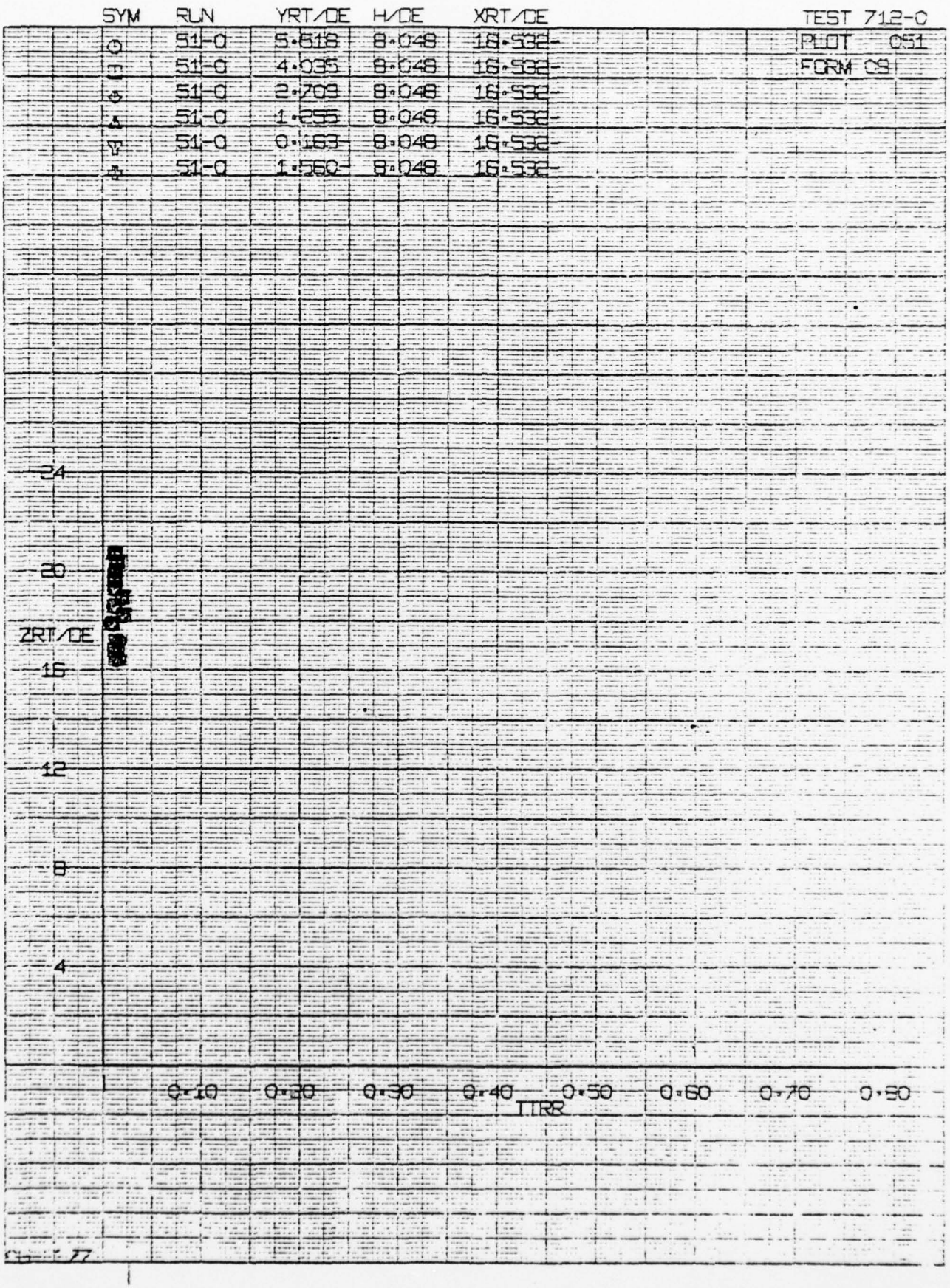


SYM	RUN	YRT/DE	H/DE	XRT/DE
○	50-0	1.567-	5.048	16.532-
□	50-0	0.170-	5.048	16.532-
◇	50-0	1.277	5.048	16.532-
△	50-0	2.674	5.048	16.532-
▽	50-0	4.050	5.048	16.532-
⊕	50-0	5.518	5.048	16.532-

TEST 712-C
PLOT 050
FORM 09

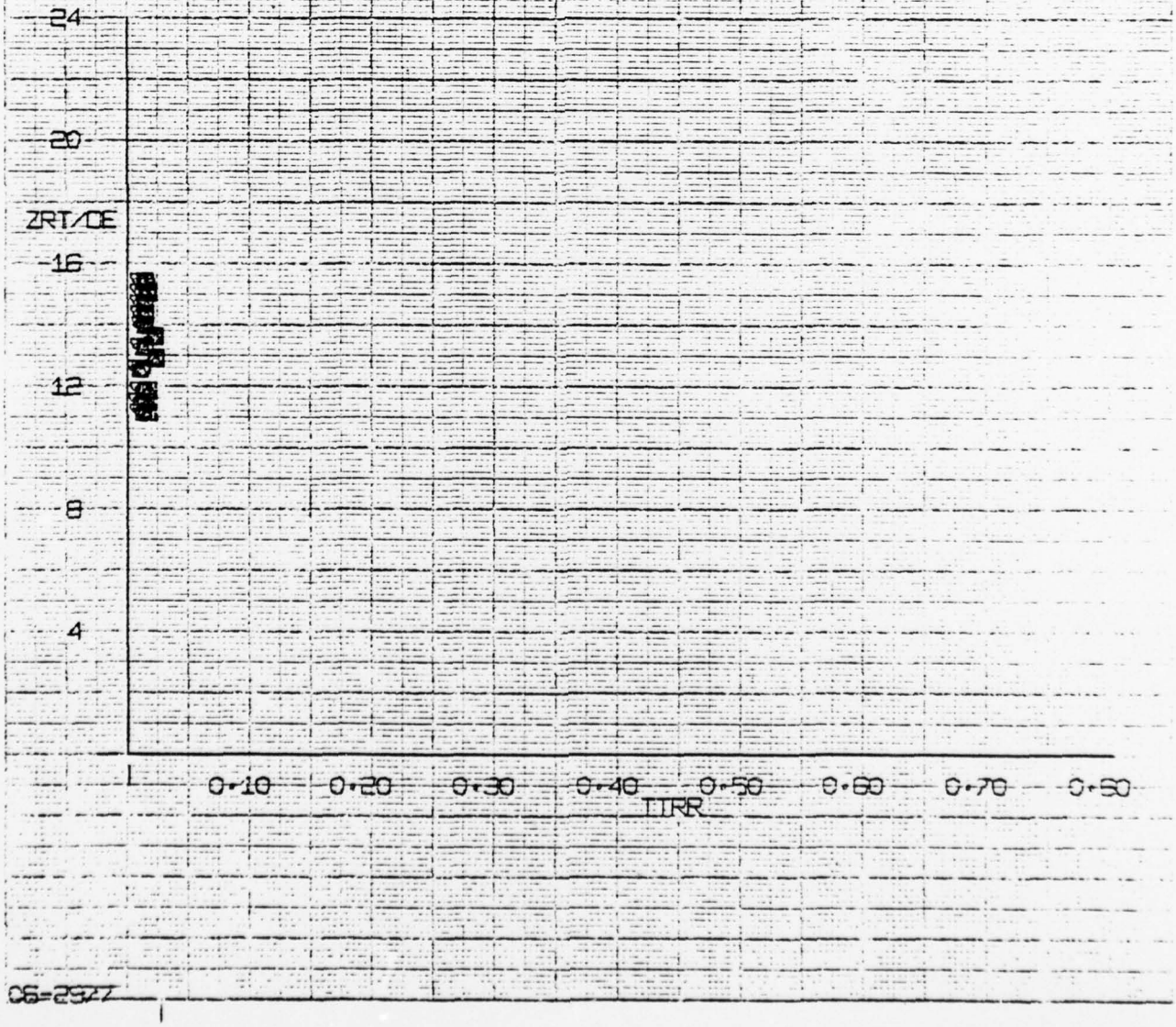


06-2977


SYM RUN YRT/DE H/DE XRT/DE
51-0 5.618 8.048 16.532
51-0 4.035 8.048 16.532
51-0 2.709 8.048 16.532
51-0 1.255 8.048 16.532
51-0 0.163 8.048 16.532
51-0 1.560 8.048 16.532
TEST 712-0
PLOT C51
FORM C8
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TTRR

SYM	RUN	YRT/DE	H/DE	XRT/DE
◷	52-0	1.567-	8.048	16.532-
⊟	52-0	0.156-	8.047	16.532-
◇	52-0	1.262	8.047	16.532-
⏃	52-0	2.752	8.047	16.532-
Ψ	52-0	4.021	8.047	16.532-
⌖	52-0	5.483	8.046	16.532-

TEST 712-0
PLOT C52
FORM C8

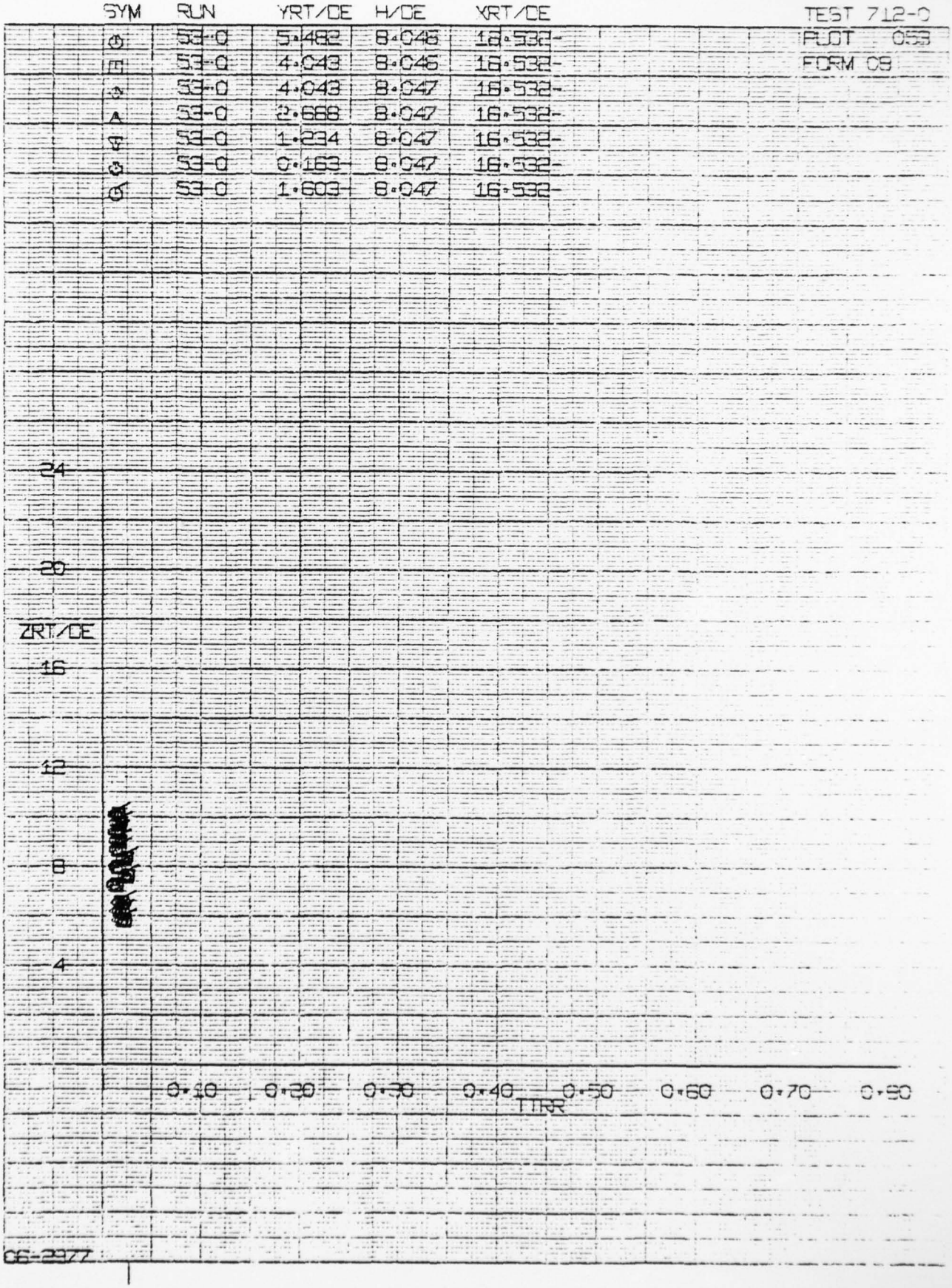


TEST 712-0

PLOT 053

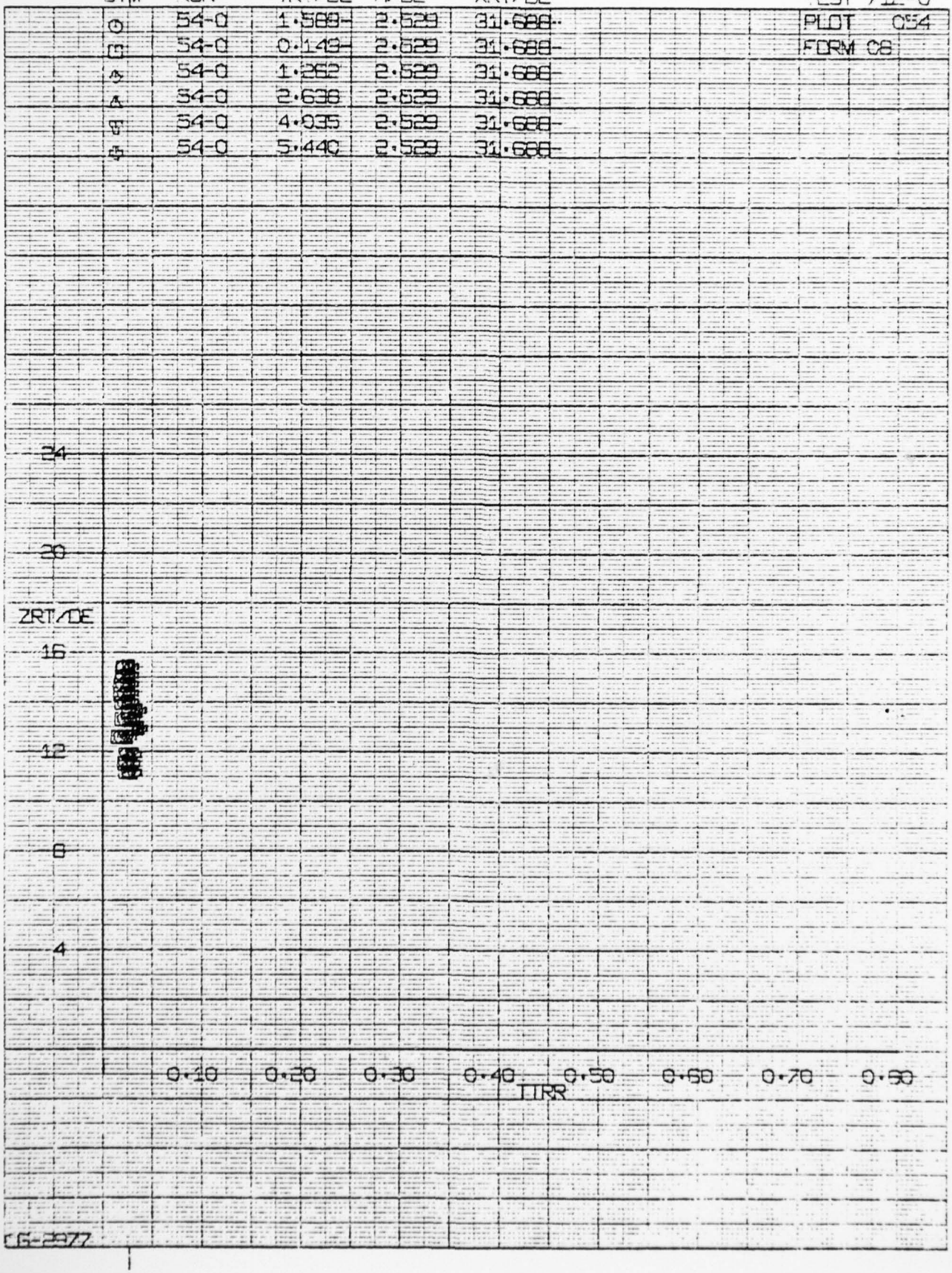
FORM 09

SYM	RUN	YRT/DE	H/DE	YRT/DE
⊕	53-0	5.482	8.046	16.532-
⊟	53-0	4.043	8.046	16.532-
⊗	53-0	4.043	8.047	16.532-
A	53-0	2.668	8.047	16.532-
⊕	53-0	1.234	8.047	16.532-
⊗	53-0	0.163-	8.047	16.532-
⊘	53-0	1.603-	8.047	16.532-



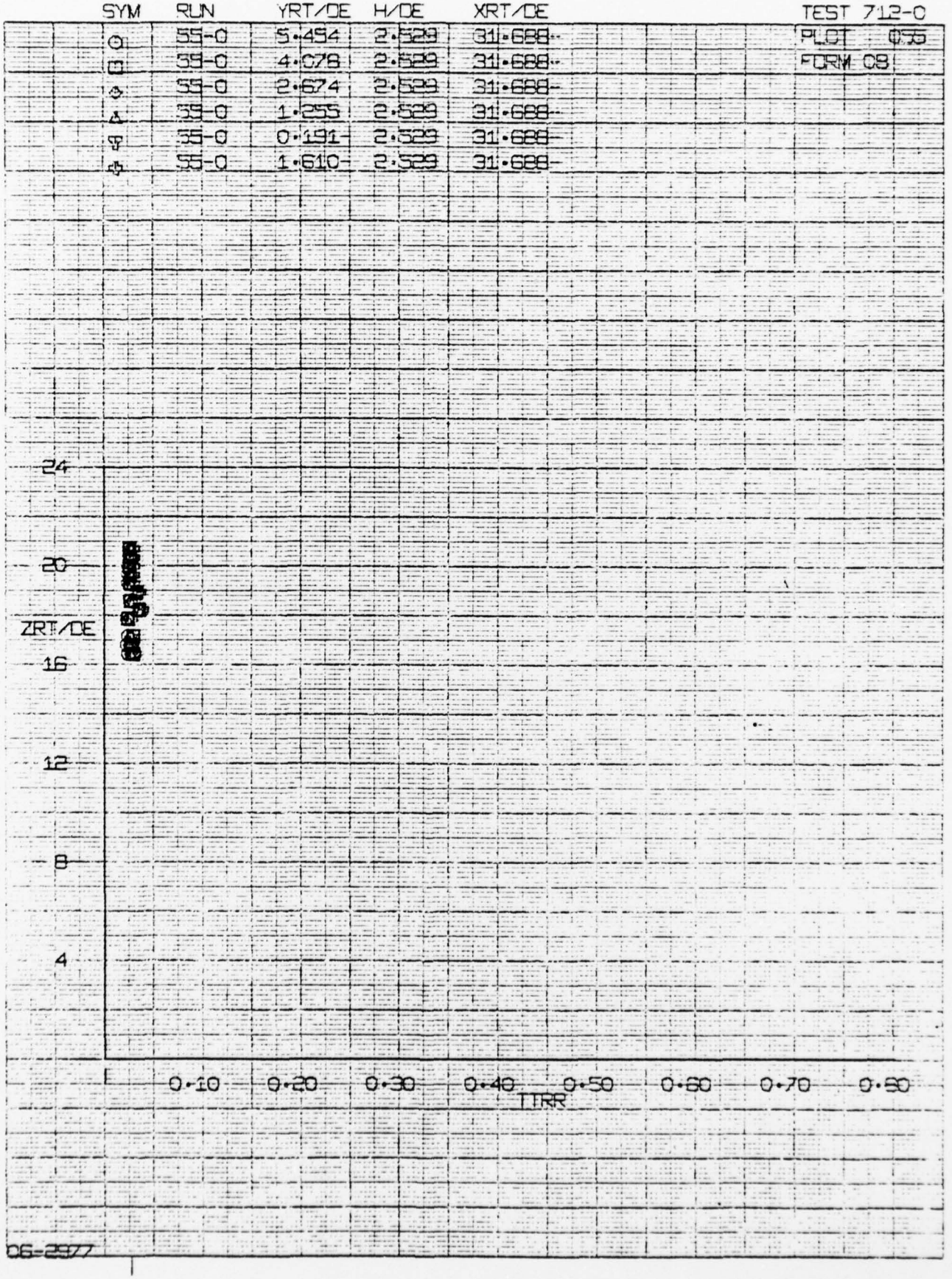
SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	54-0	1.588-	2.529	31.688-
□	54-0	0.143-	2.529	31.688-
◇	54-0	1.262	2.529	31.686-
△	54-0	2.638	2.529	31.688-
▽	54-0	4.035	2.529	31.688-
◇	54-0	5.440	2.529	31.688-

TEST 712-0
PLOT 054
FORM 08



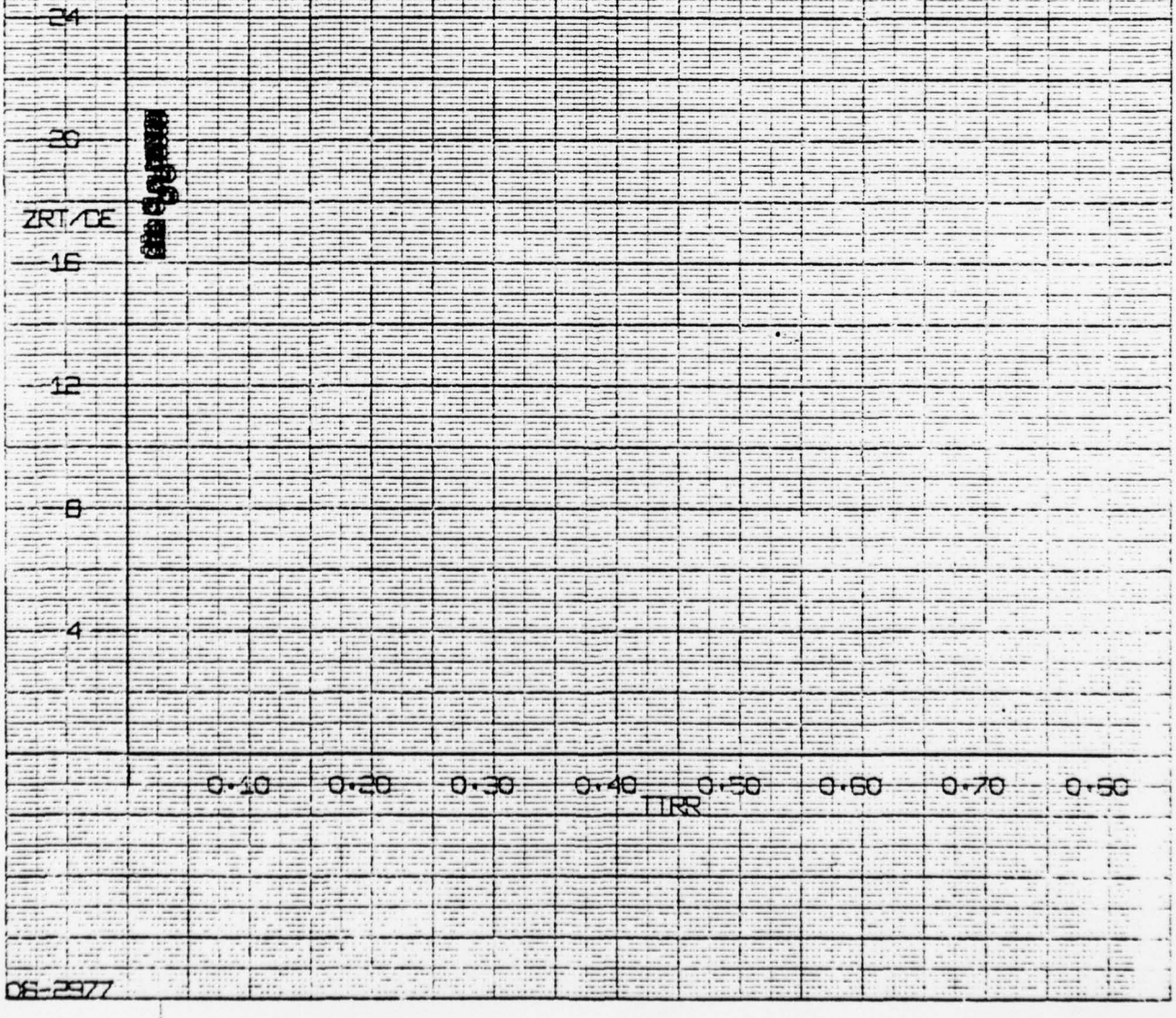
SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	55-0	5.494	2.529	31.688
□	55-0	4.078	2.529	31.688
◇	55-0	2.674	2.529	31.688
△	55-0	1.255	2.529	31.688
▽	55-0	0.191	2.529	31.688
◁	55-0	1.610	2.529	31.688

TEST 712-0
PLOT 055
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	56-0	1.610	3.536	31.688
□	56-0	0.191	3.537	31.688
◇	56-0	1.199	3.537	31.688
△	56-0	2.688	3.537	31.688
▽	56-0	4.106	3.537	31.688
⊕	56-0	5.525	3.537	31.688

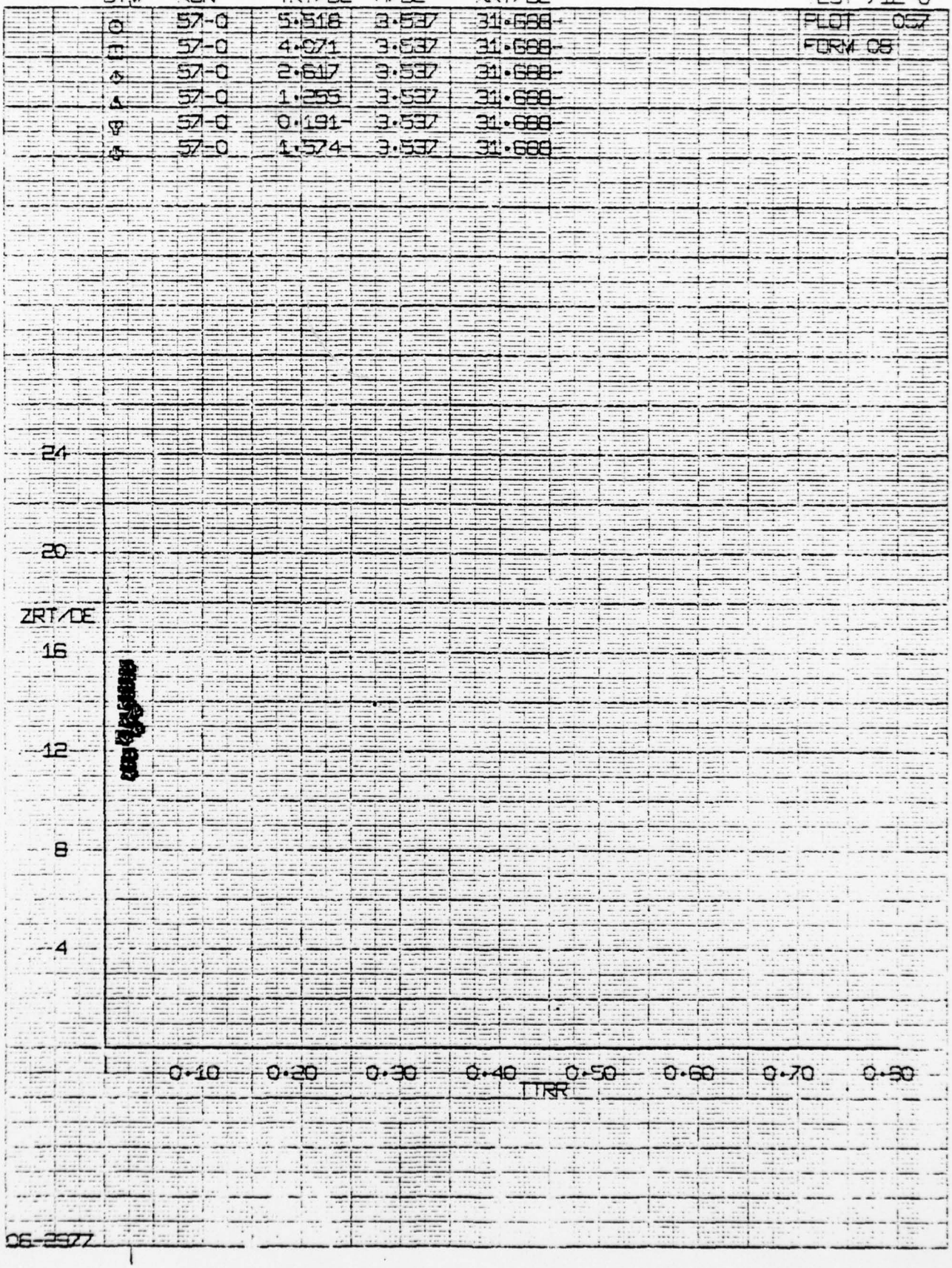
TEST 712-0
PLOT 056
FORM 08



08-2977

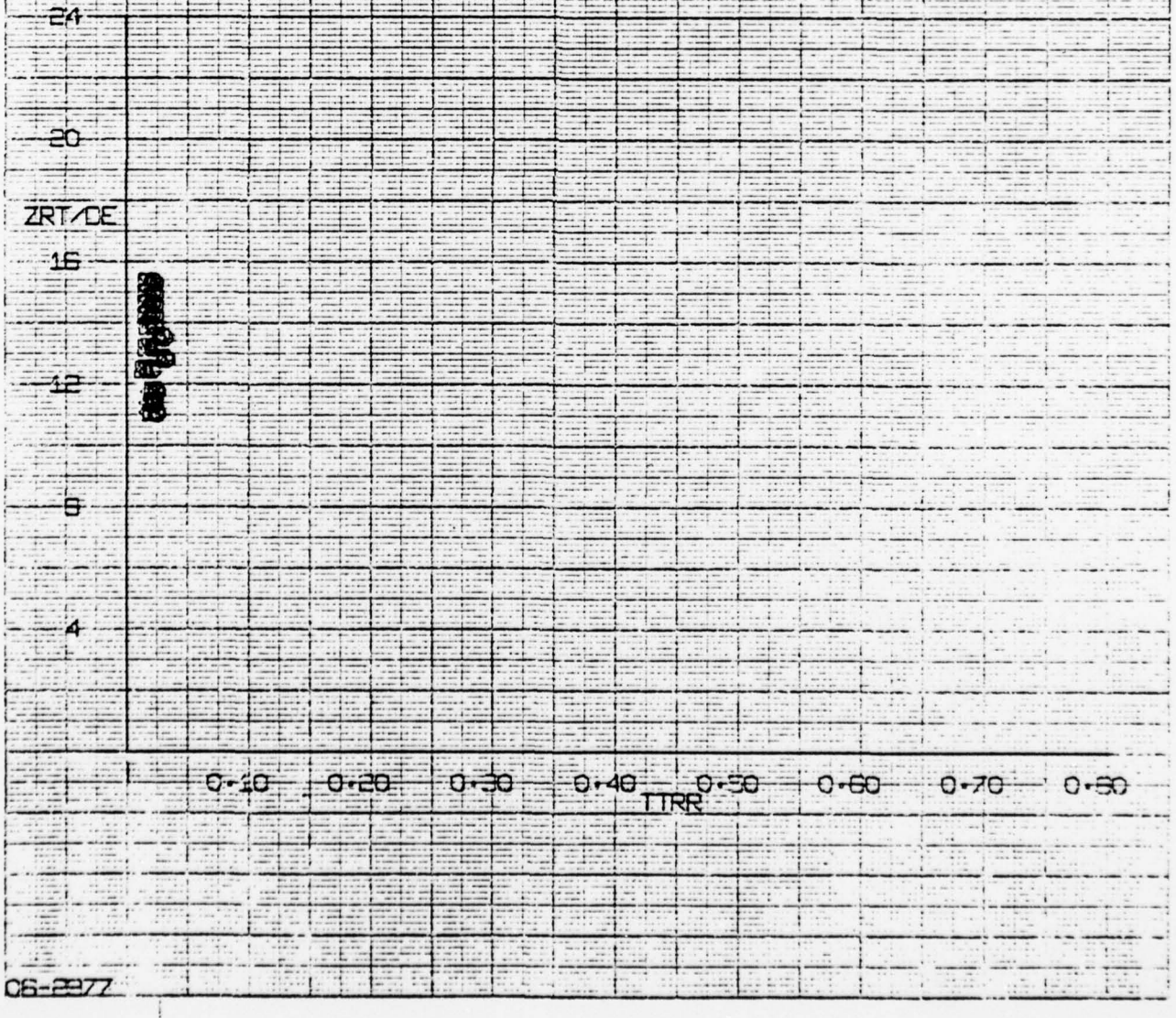
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	57-0	5.518	3.537	31.688-
□	57-0	4.571	3.537	31.688-
◇	57-0	2.617	3.537	31.688-
△	57-0	1.255	3.537	31.688-
▽	57-0	0.191-	3.537	31.688-
◁	57-0	1.574-	3.537	31.688

TEST 712-0
PLOT 057
FORM 05



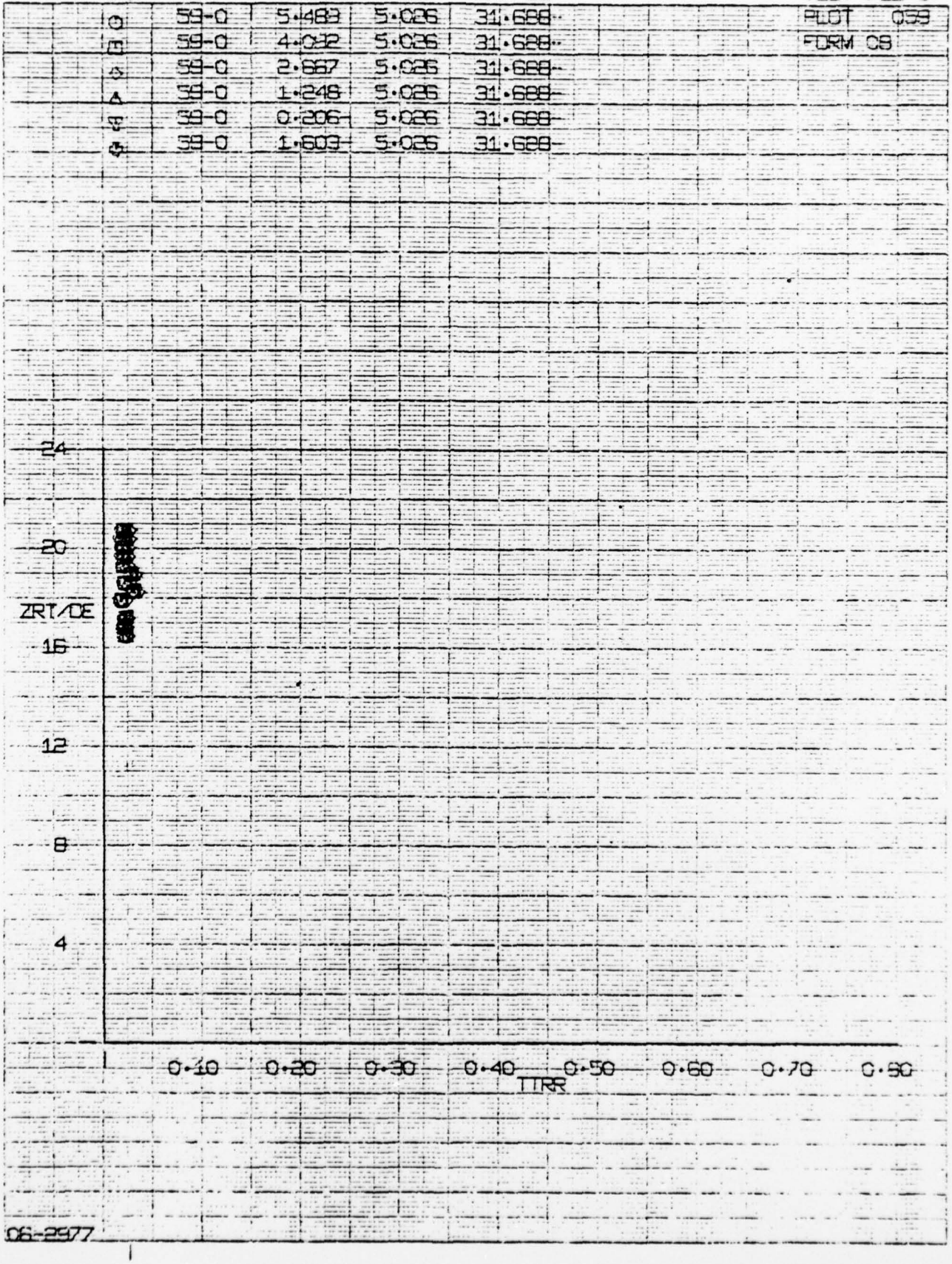
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	58-0	1.574-	5.025	31.688-
□	58-0	0.143-	5.025	31.688-
◇	58-0	1.248	5.025	31.688-
△	58-0	2.709	5.025	31.688-
▽	58-0	4.035	5.026	31.688-
◁	58-0	5.475	5.026	31.688-

TEST 712-0
PLOT 052
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
○	59-0	5.483	5.026	31.688
□	59-0	4.032	5.026	31.628
◇	59-0	2.667	5.026	31.688
△	59-0	1.248	5.026	31.688
▽	59-0	0.206	5.026	31.688
◁	59-0	1.603	5.026	31.628

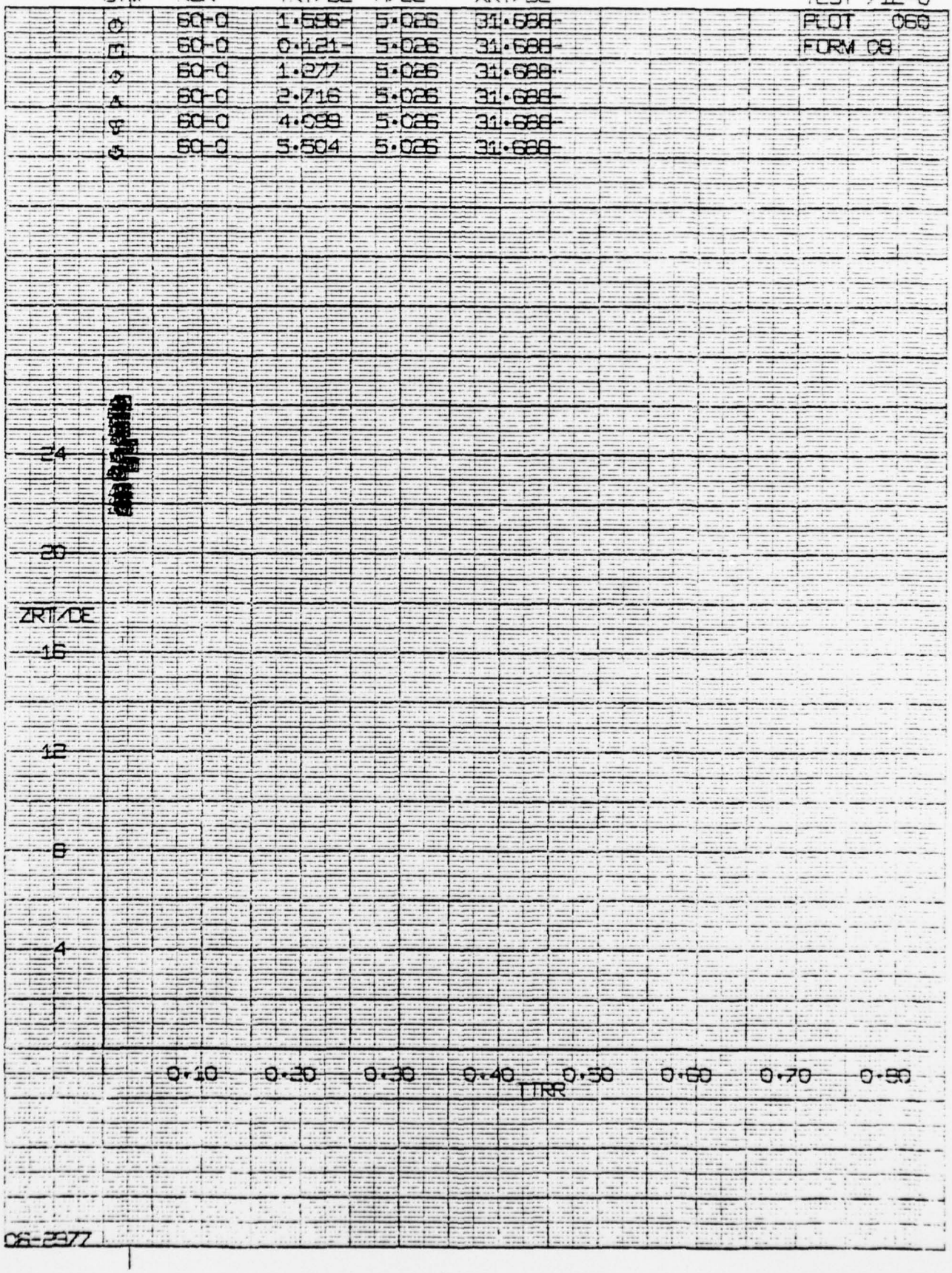
TEST 712-0
PLOT 059
FORM 08



06-2977

SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	60-0	1.596	5.026	31.688
□	60-0	0.421	5.026	31.688
◇	60-0	1.277	5.026	31.688
△	60-0	2.716	5.026	31.688
▽	60-0	4.099	5.026	31.688
⊙	60-0	5.504	5.026	31.688

TEST 712-0
PLOT 060
FORM 08



SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	61-0	5.504	8.032	31.688
□	61-0	4.050	8.033	31.688
◇	61-0	2.681	8.033	31.688
△	61-0	1.220	8.032	31.688
▽	61-0	0.170	8.032	31.688
✣	61-0	1.589	8.032	31.689

TEST 712-0
PLOT 061
FORM 08

[redacted]

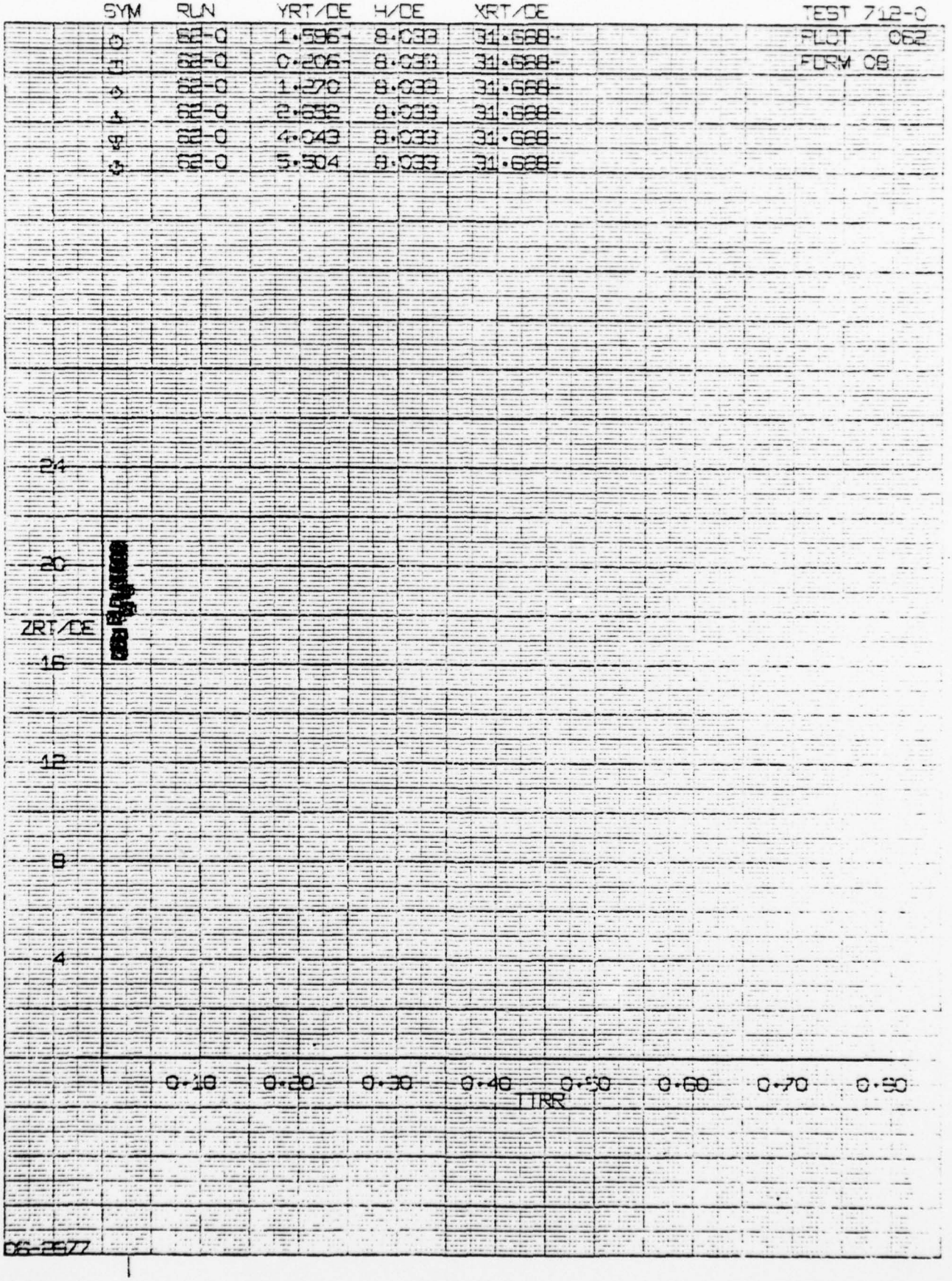
24
20
ZRT/DE
16
12
8
4

0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80
ITRR

CE-2377

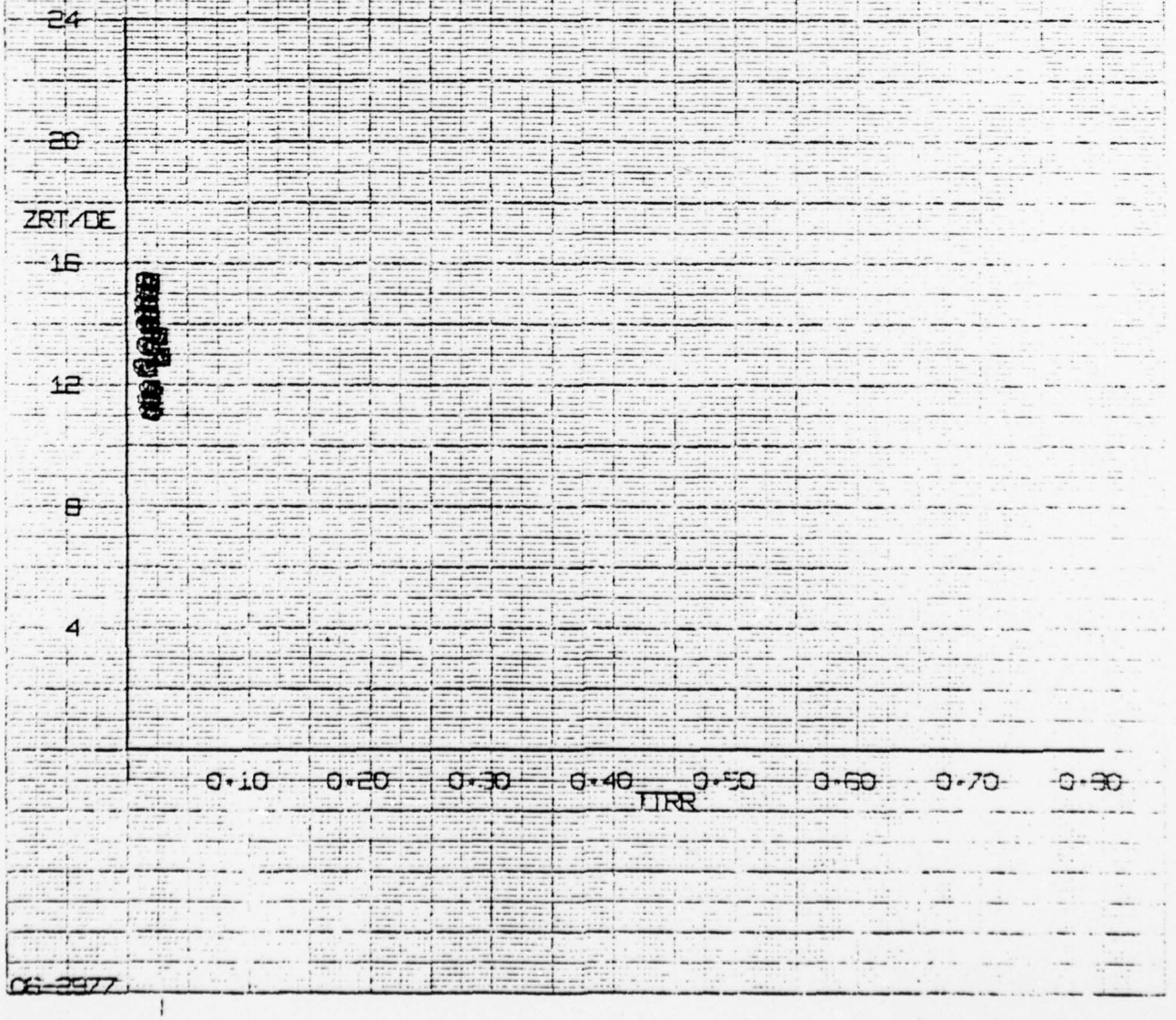
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	62-0	1.596-	8.033	31.688-
□	62-0	0.206-	8.033	31.688-
◇	62-0	1.270	8.033	31.688-
△	62-0	2.632	8.033	31.688-
▽	62-0	4.043	8.033	31.688-
◁	62-0	5.504	8.033	31.688-

TEST 712-0
PLOT 062
FORM 08



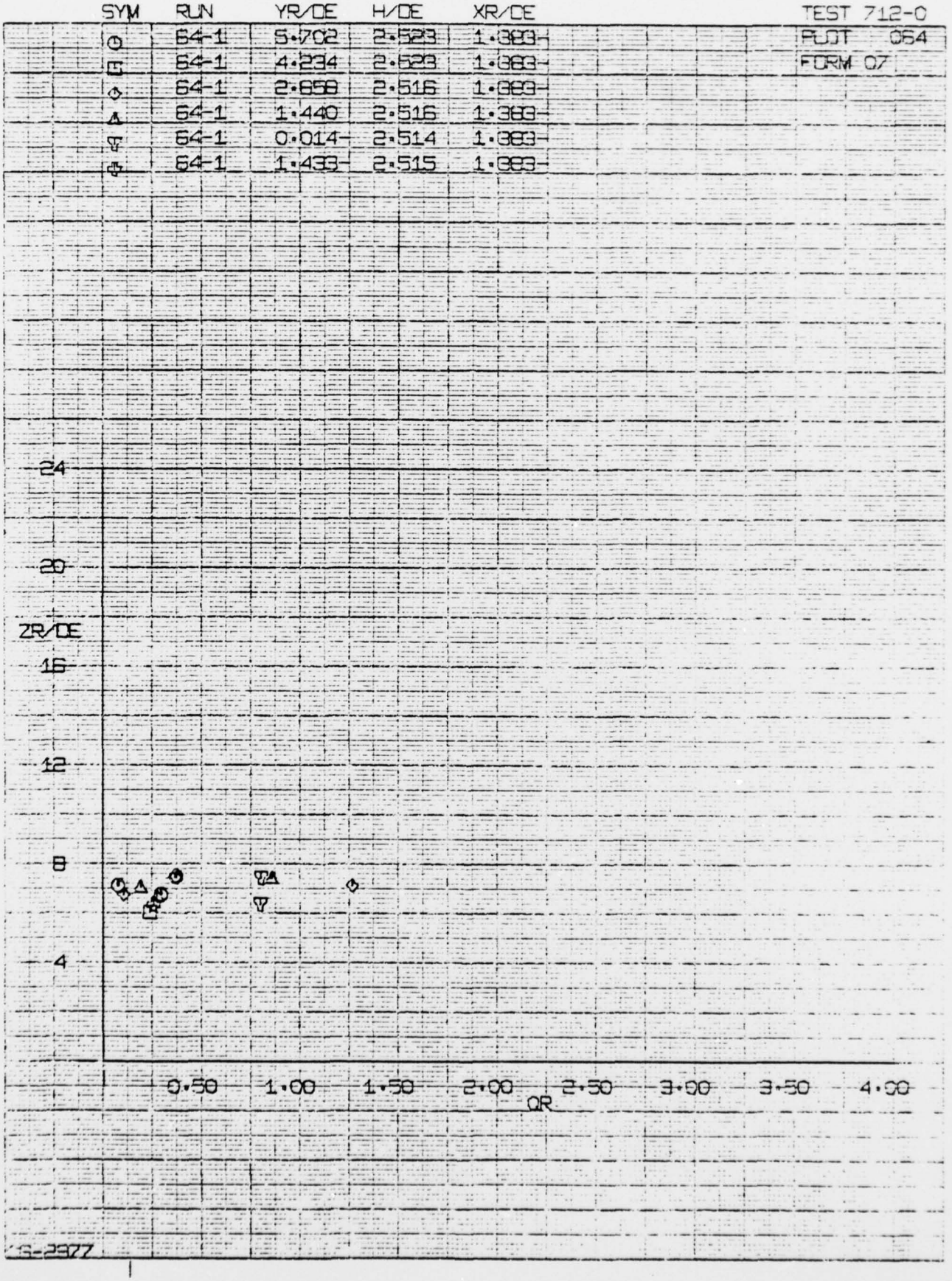
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	63-0	5.504	8.033	31.688
□	63-0	4.043	8.033	31.688
◇	63-0	2.674	8.033	31.688
△	63-0	1.248	8.033	31.688
▽	63-0	0.142	8.033	31.688
⊲	63-0	1.631	8.033	31.688

TEST 712-0
PLOT 063
FORM 09



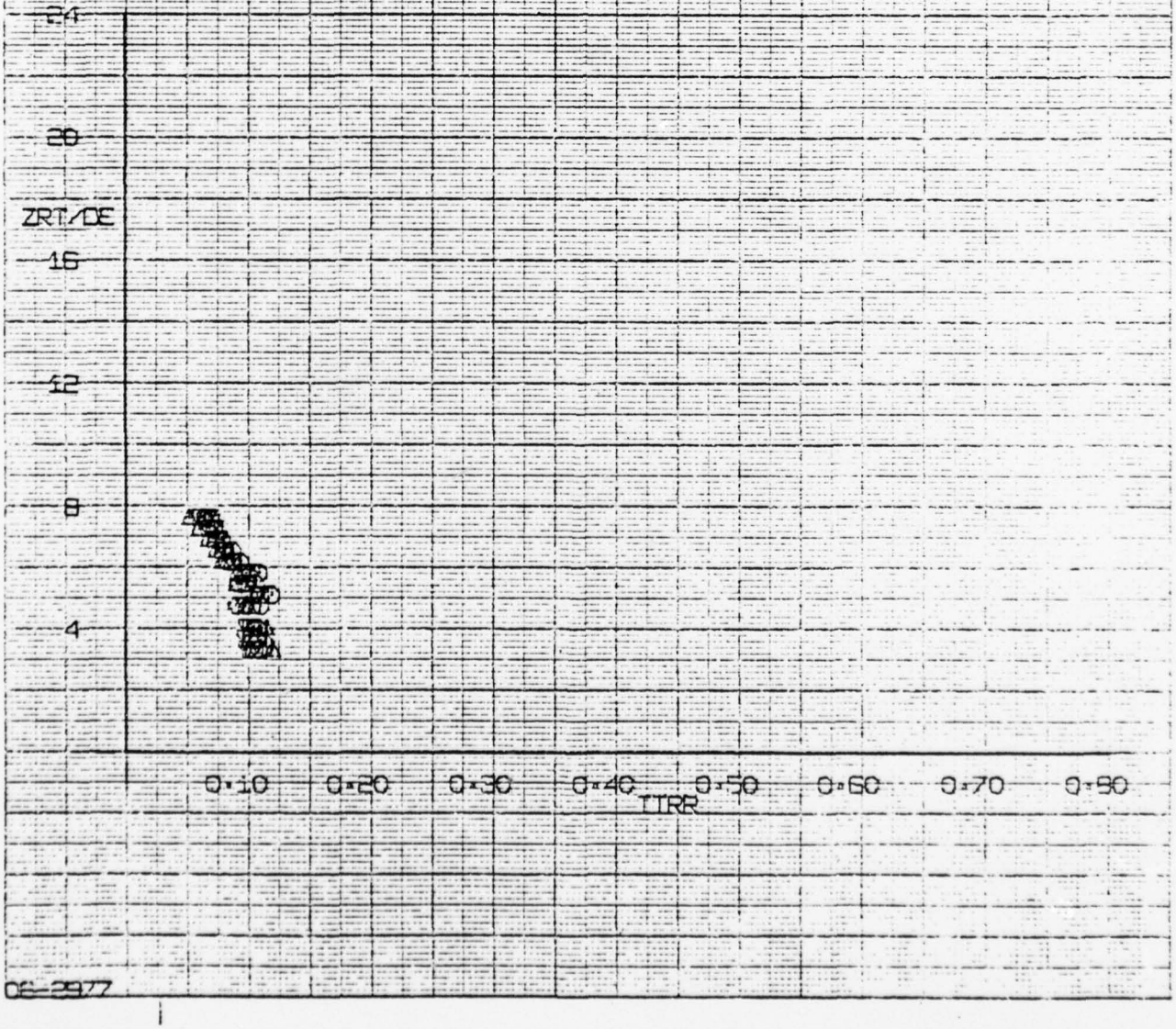
SYM	RUN	YR/DE	H/DE	XR/DE
○	64-1	5.702	2.523	1.383
□	64-1	4.234	2.523	1.383
◇	64-1	2.858	2.516	1.383
△	64-1	1.440	2.516	1.383
▽	64-1	0.014	2.514	1.383
⊕	64-1	1.433	2.515	1.383

TEST 712-0
PUJT 064
FORM 07

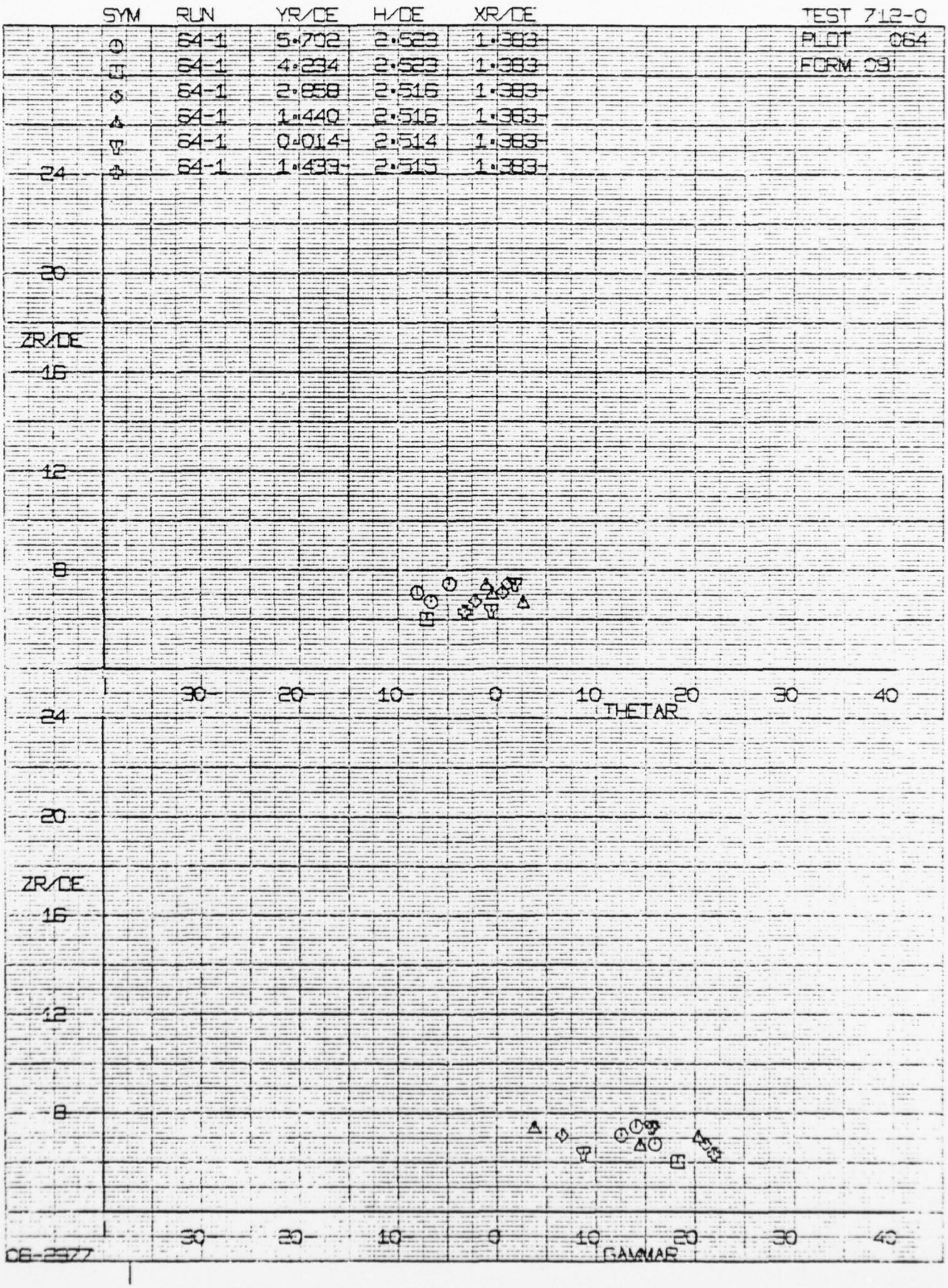


SYM	RUN	YRT/DE	H/DE	XRT/DE
○	64-1	5.625	2.523	1.383
□	64-1	4.057	2.523	1.383
◇	64-1	2.681	2.516	1.383
△	64-1	1.262	2.516	1.383
▽	64-1	0.191-	2.514	1.383
◁	64-1	1.610-	2.515	1.383

TEST 712-0
PLOT C64
FORM 08

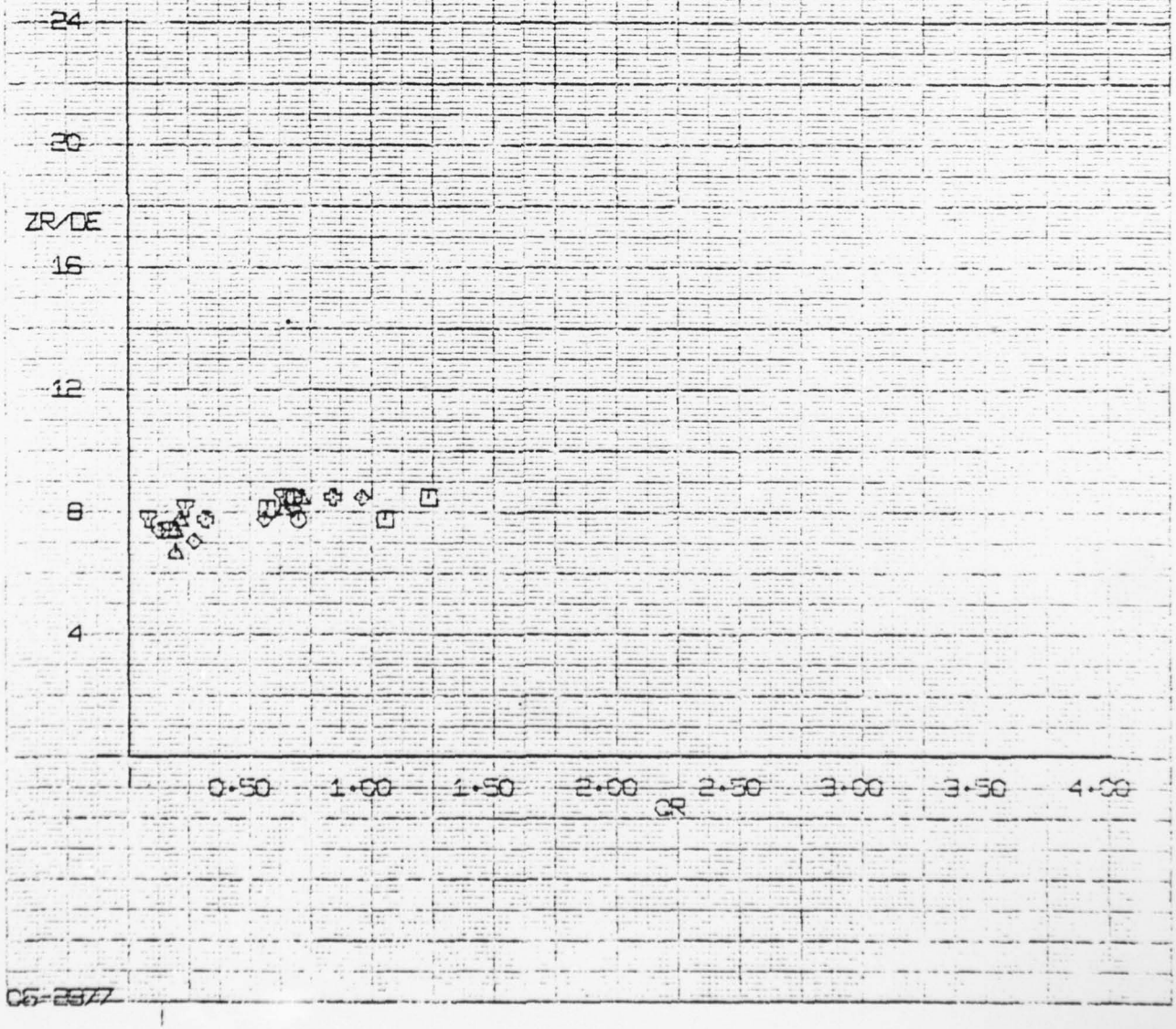


06-2977


SYM RUN YR/DE H/DE XR/DE
64-1 5.702 2.523 1.383
64-1 4.234 2.523 1.383
64-1 2.858 2.516 1.383
64-1 1.440 2.516 1.383
64-1 0.014 2.514 1.383
64-1 1.433 2.515 1.383
TEST 712-0
PLOT 064
FORM 09
ZR/DE
THETAR
GAMMAR
24
20
16
12
8
30
20
10
0
10
20
30
40
C6-2577

SYM	RUN	YR/DE	H/DE	XR/DE
○	65-1	1.433	3.529	1.383
□	65-1	0.014	3.529	1.383
◇	65-1	1.454	3.529	1.383
△	65-1	2.879	3.529	1.383
✣	65-1	4.277	3.529	1.383
✣	65-1	5.660	3.529	1.383

TEST 712-0
PLOT 065
FORM 07



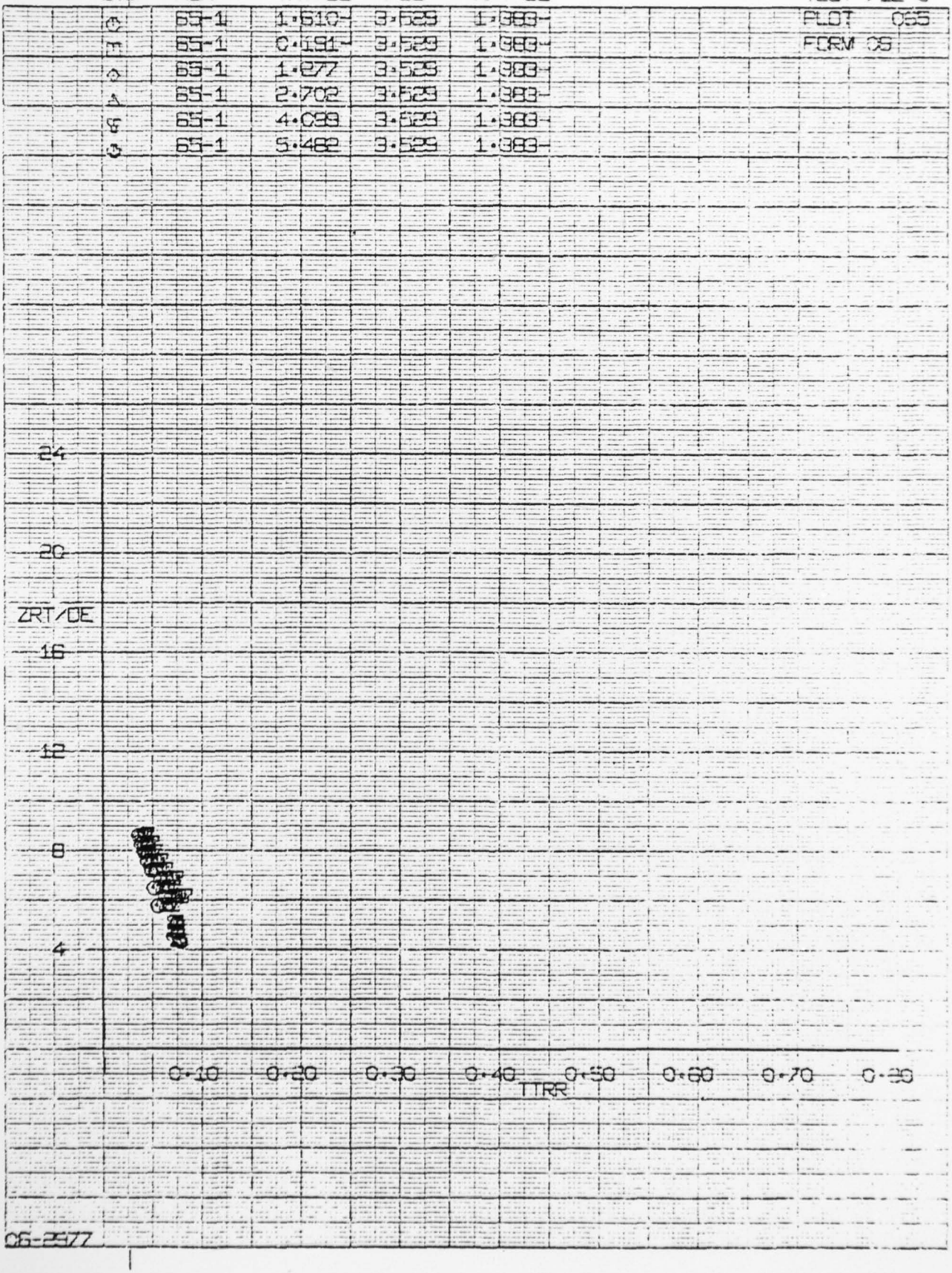
06-2577

TEST 712-0

PLOT 065

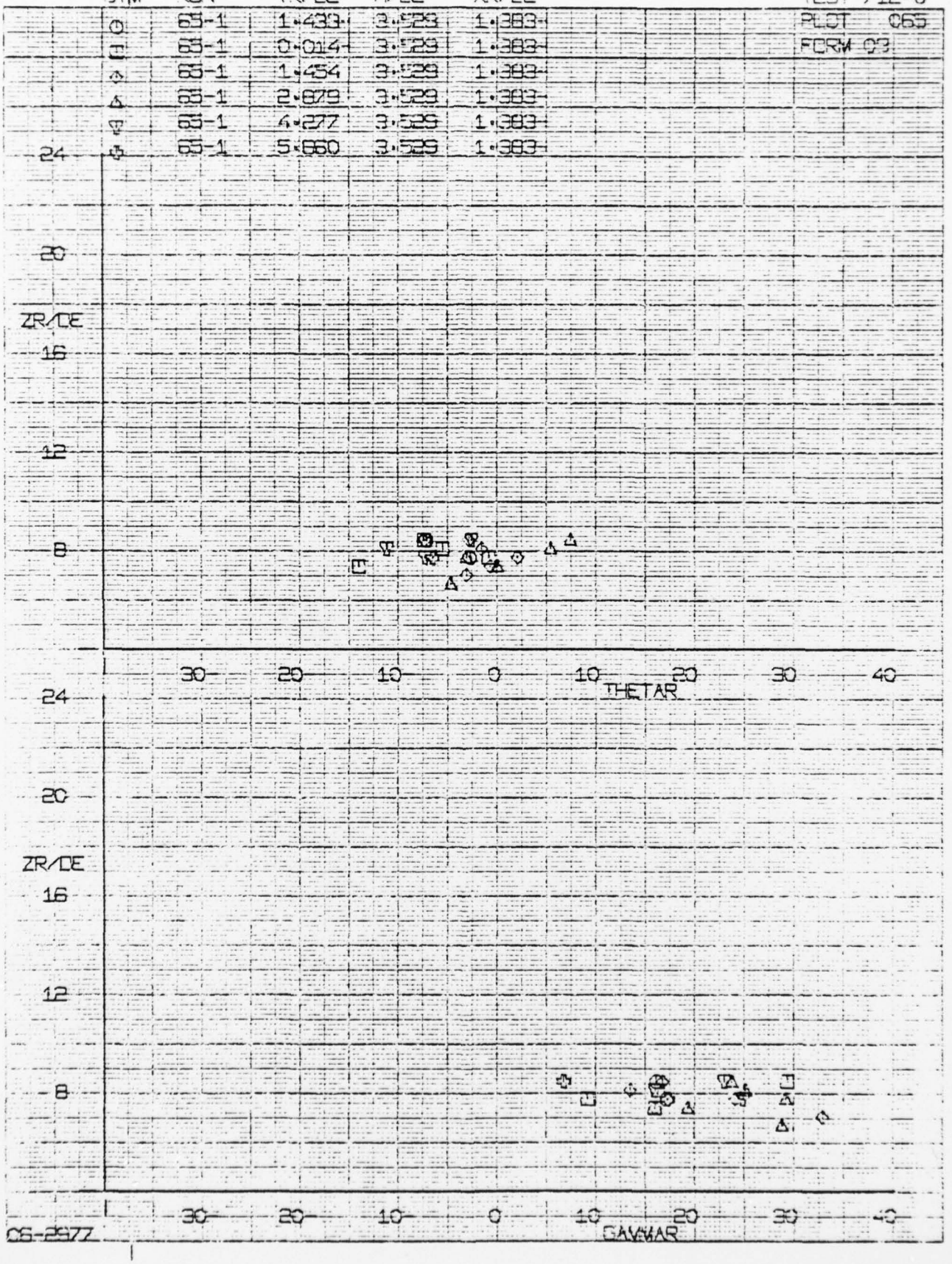
FORM 05

SYM	RUN	YRT/DE	H/DE	XRT/DE
⊕	65-1	1.610-	3.529	1.383-
□	65-1	0.191-	3.529	1.383-
◇	65-1	1.277	3.529	1.383-
△	65-1	2.702	3.529	1.383-
⊕	65-1	4.099	3.529	1.383-
⊕	65-1	5.482	3.529	1.383-



SYM	RUN	YR/DE	H/DE	XR/DE
○	65-1	1.433	3.529	1.383
□	65-1	0.014	3.529	1.383
◇	65-1	1.454	3.529	1.383
△	65-1	2.879	3.529	1.383
▽	65-1	4.277	3.529	1.383
✣	65-1	5.660	3.529	1.383

TEST 712-0
PLOT C65
FORM 03



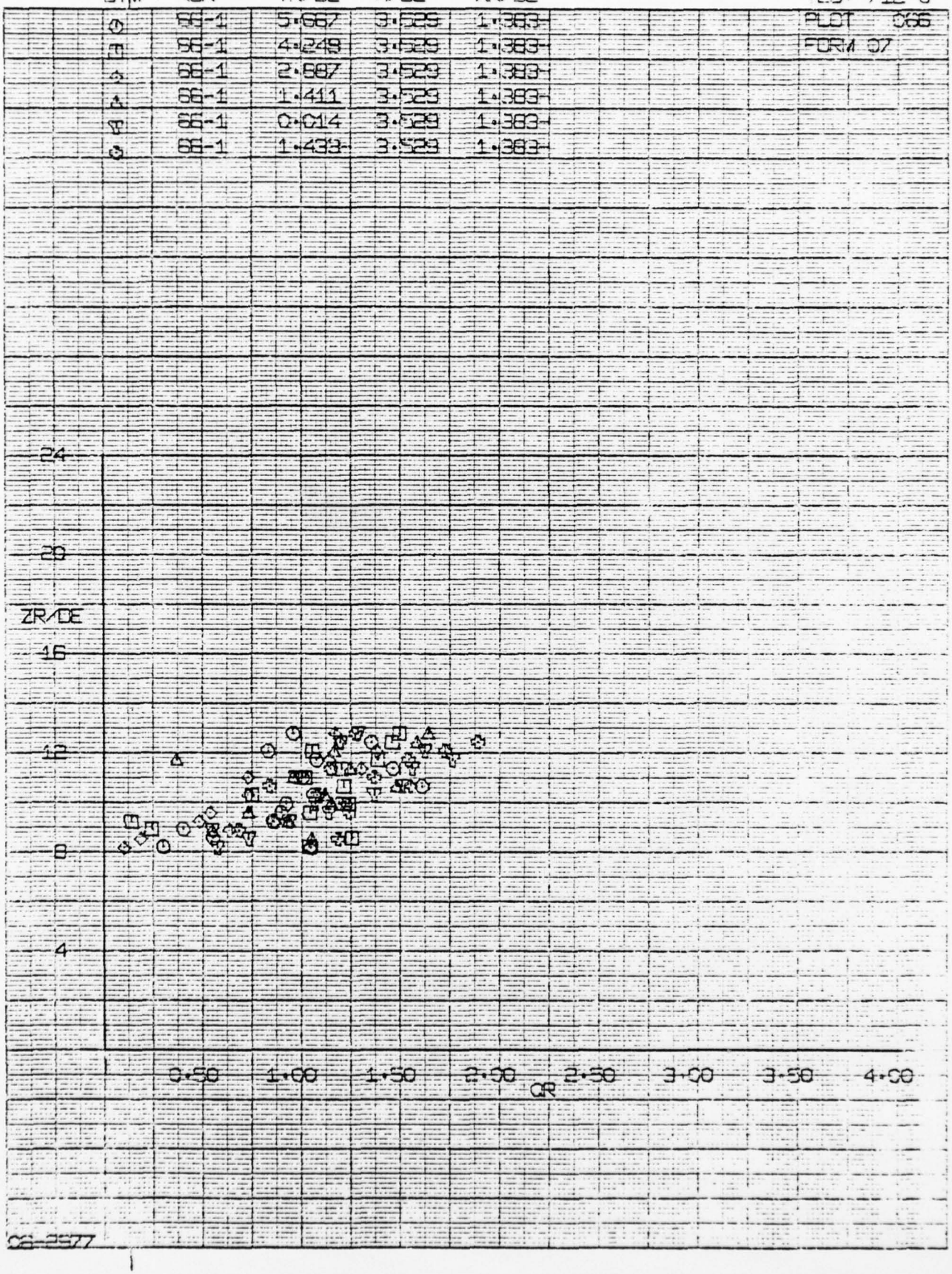
CS-2577

TEST 712-0

PLOT 066

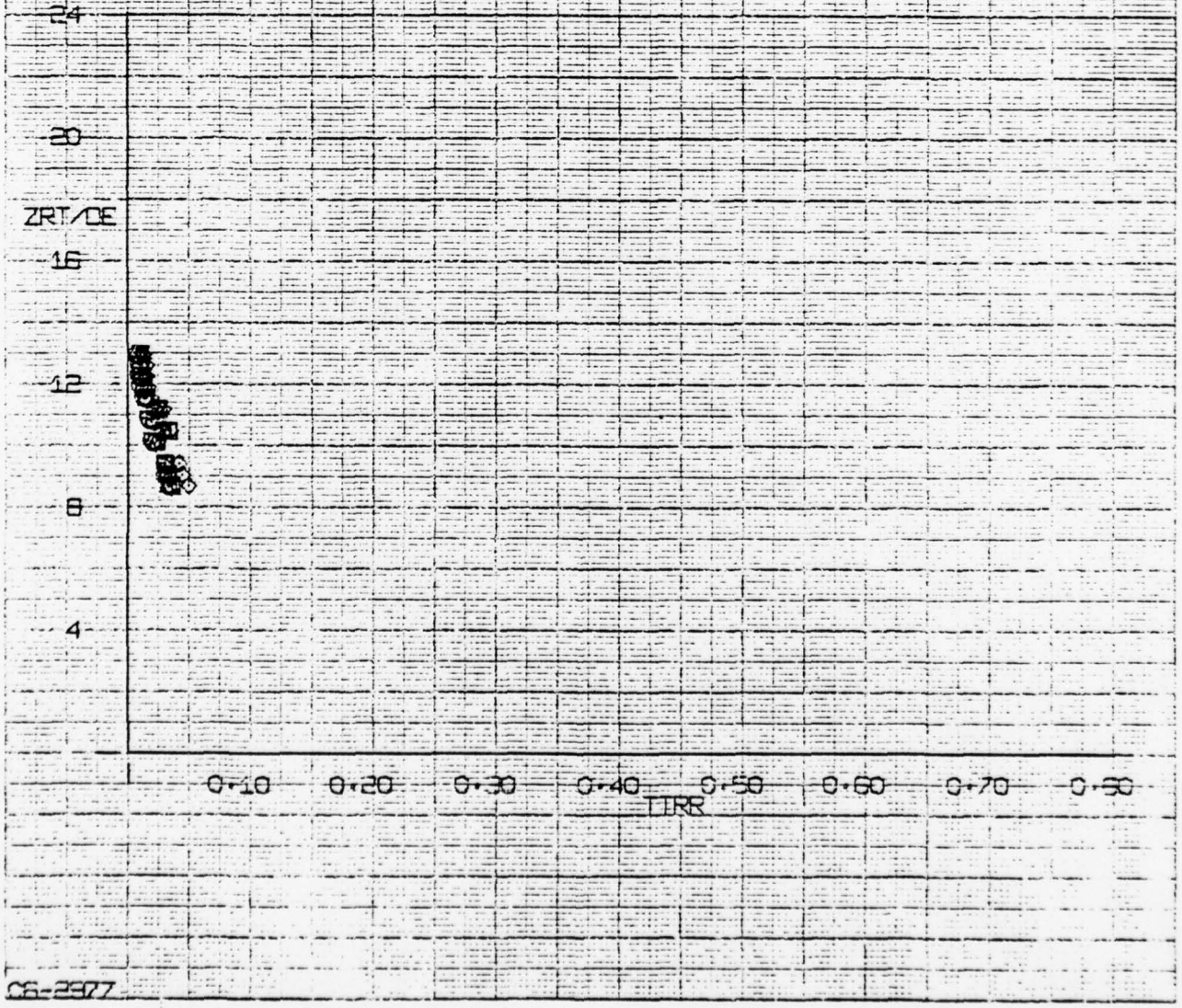
FORM 07

SYM	RUN	YR/DE	H/DE	XR/DE
○	66-1	5.667	3.529	1.383
□	66-1	4.249	3.529	1.383
◇	66-1	2.887	3.529	1.383
△	66-1	1.411	3.529	1.383
▽	66-1	0.014	3.529	1.383
○	66-1	1.433	3.529	1.383

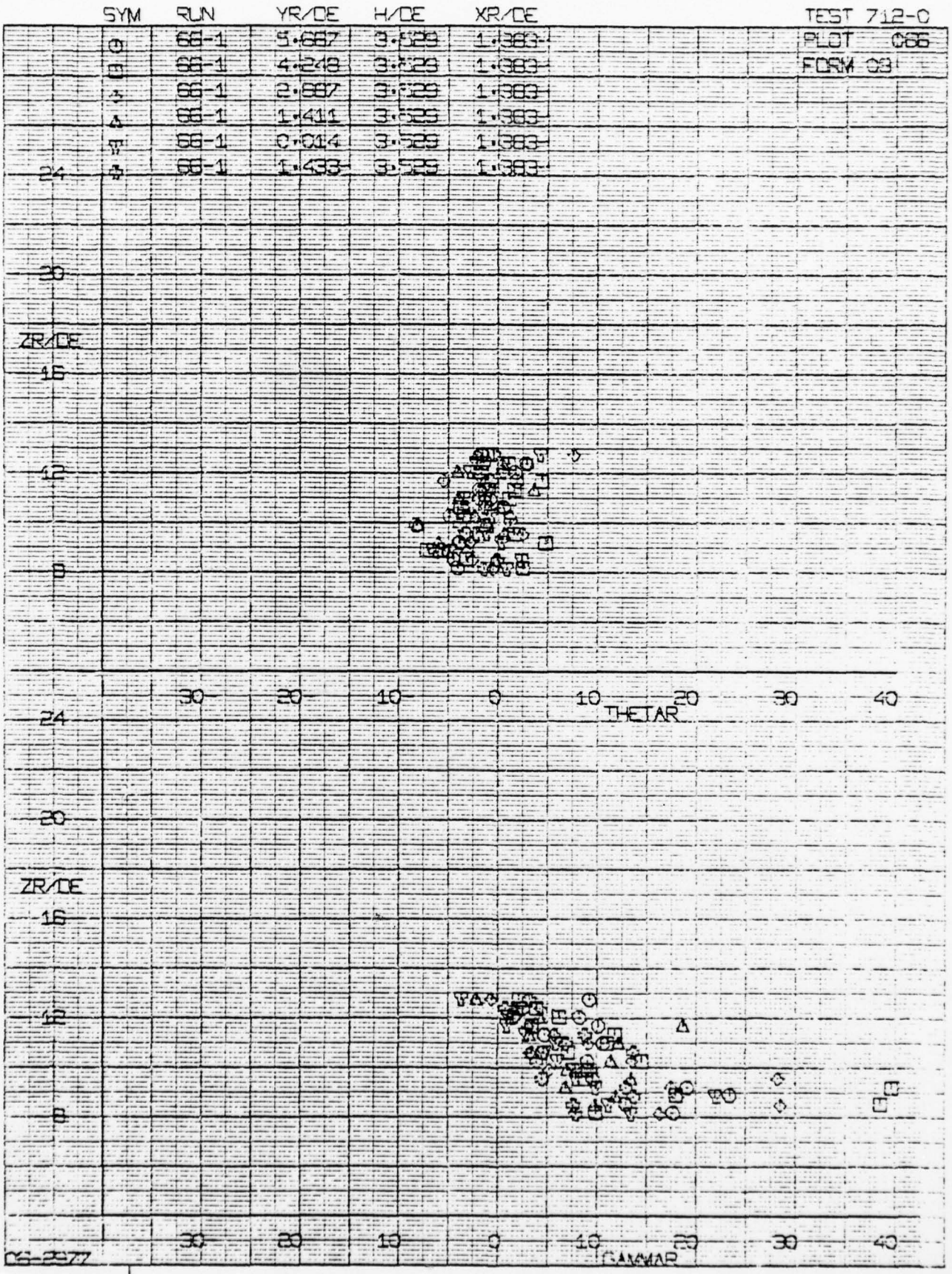


SYM	RUN	YRT/DE	H/DE	XRT/DE
○	66-1	5.489	3.529	1.383
□	66-1	4.071	3.529	1.383
◇	66-1	2.709	3.529	1.383
△	66-1	1.234	3.529	1.383
▽	66-1	0.163	3.529	1.383
⊕	66-1	1.610	3.529	1.383

TEST 712-0
PLOT 066
FORM 08



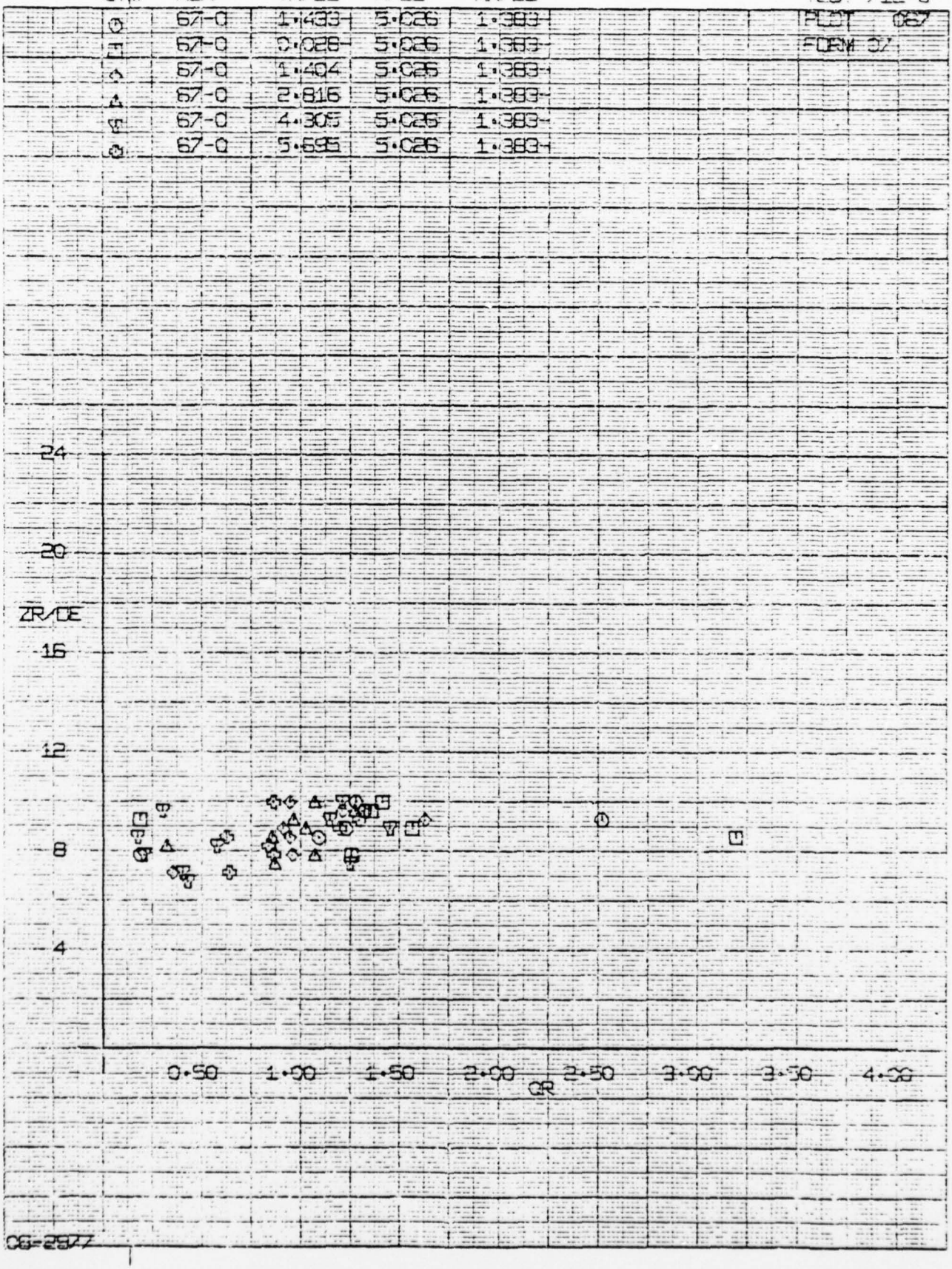
C6-2977


SYM RUN YR/DE H/DE XR/DE
66-1 5.687 3.529 1.383
66-1 4.248 3.529 1.383
66-1 2.887 3.529 1.383
66-1 1.411 3.529 1.383
66-1 0.014 3.529 1.383
66-1 1.433 3.529 1.383
TEST 712-0
PLOT 066
FORM 03
ZR/DE
THETAR
GAMMAR
66-2977

TEST 712-0

SYM	RUN	YR/DE	H/DE	XR/DE
○	67-0	1.433+	5.026	1.383+
□	67-0	0.028+	5.026	1.383+
◇	67-0	1.404	5.026	1.383+
△	67-0	2.816	5.026	1.383+
▽	67-0	4.305	5.026	1.383+
⬡	67-0	5.695	5.026	1.383+

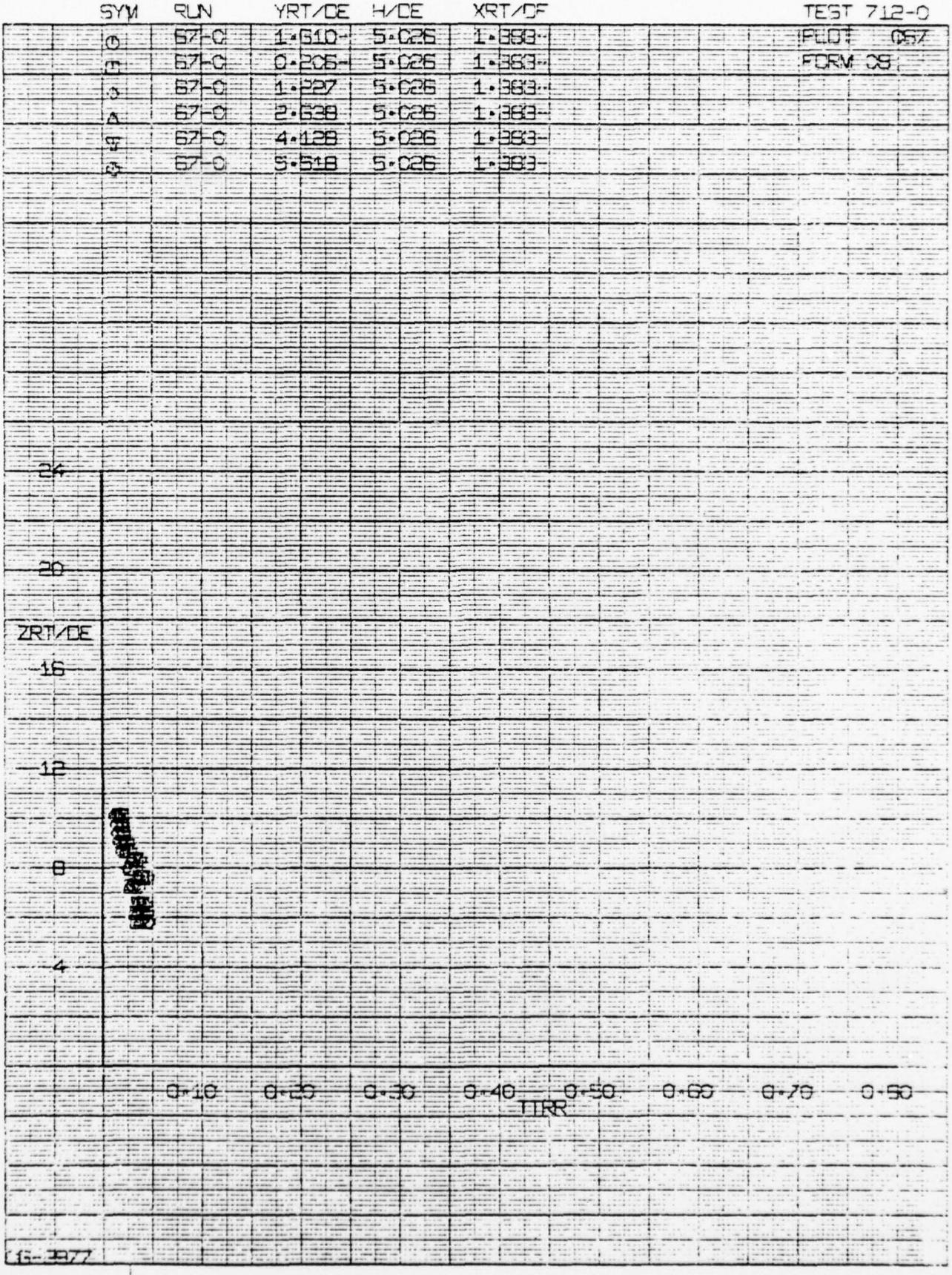
PLOT 027
FORM 3X

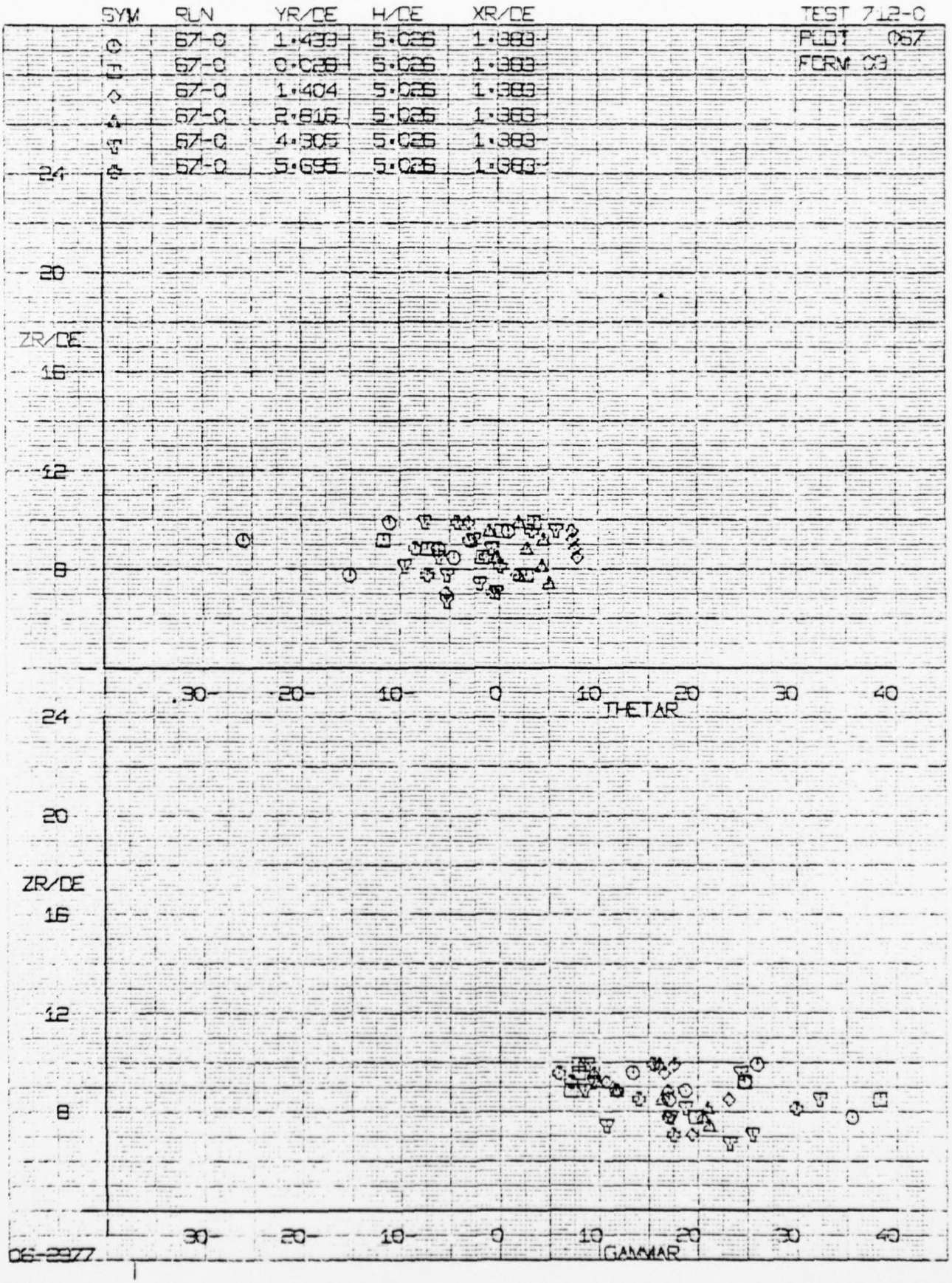


06-2977

SYM	RUN	YRT/DE	H/DE	XRT/DF
○	67-0	1.610-	5.026	1.388-
□	67-0	0.206-	5.026	1.363-
◇	67-0	1.227	5.026	1.363-
△	67-0	2.638	5.026	1.363-
▽	67-0	4.128	5.026	1.363-
◁	67-0	5.518	5.026	1.383-

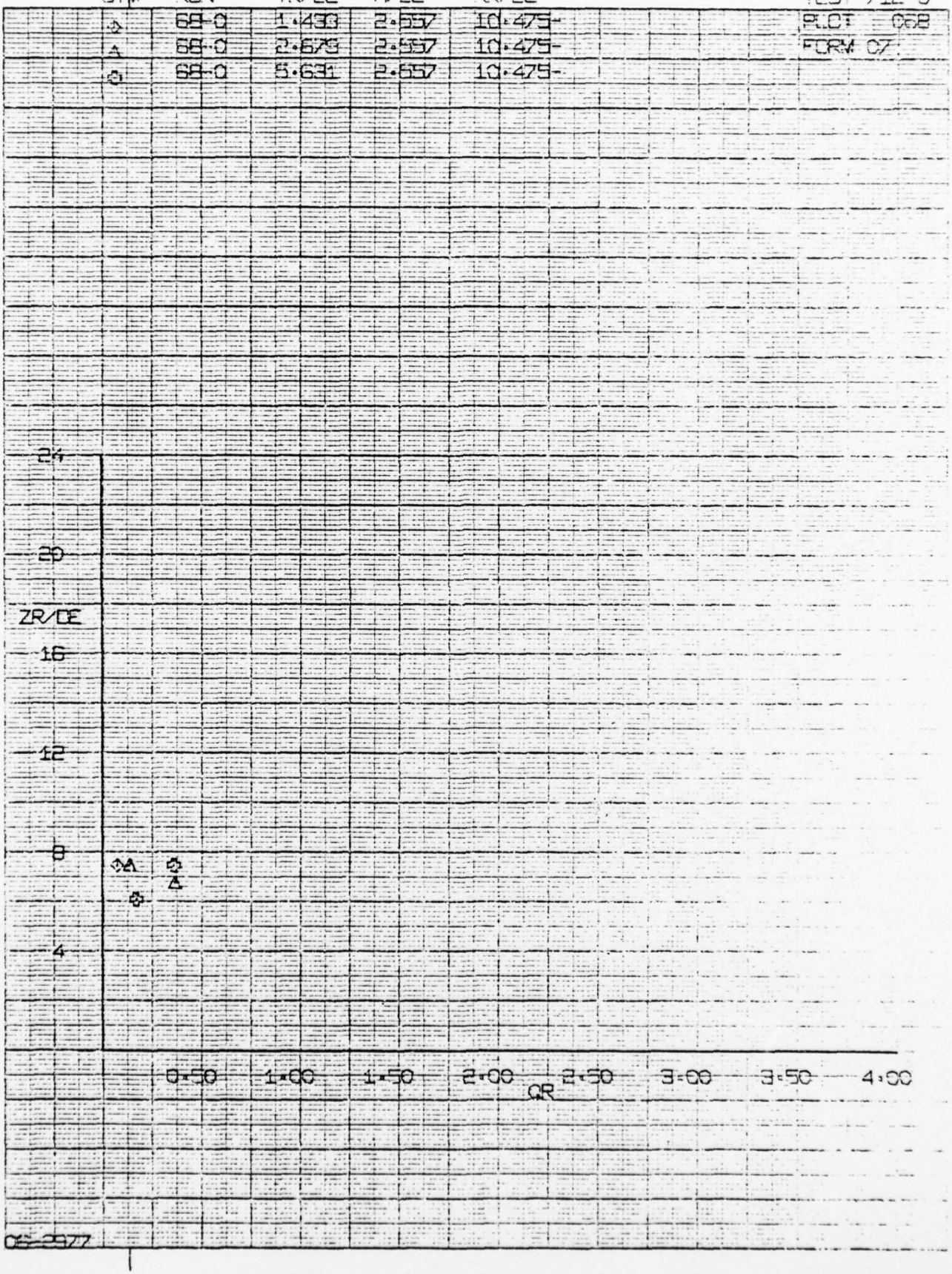
TEST 712-0
PLOT 057
FORM 28

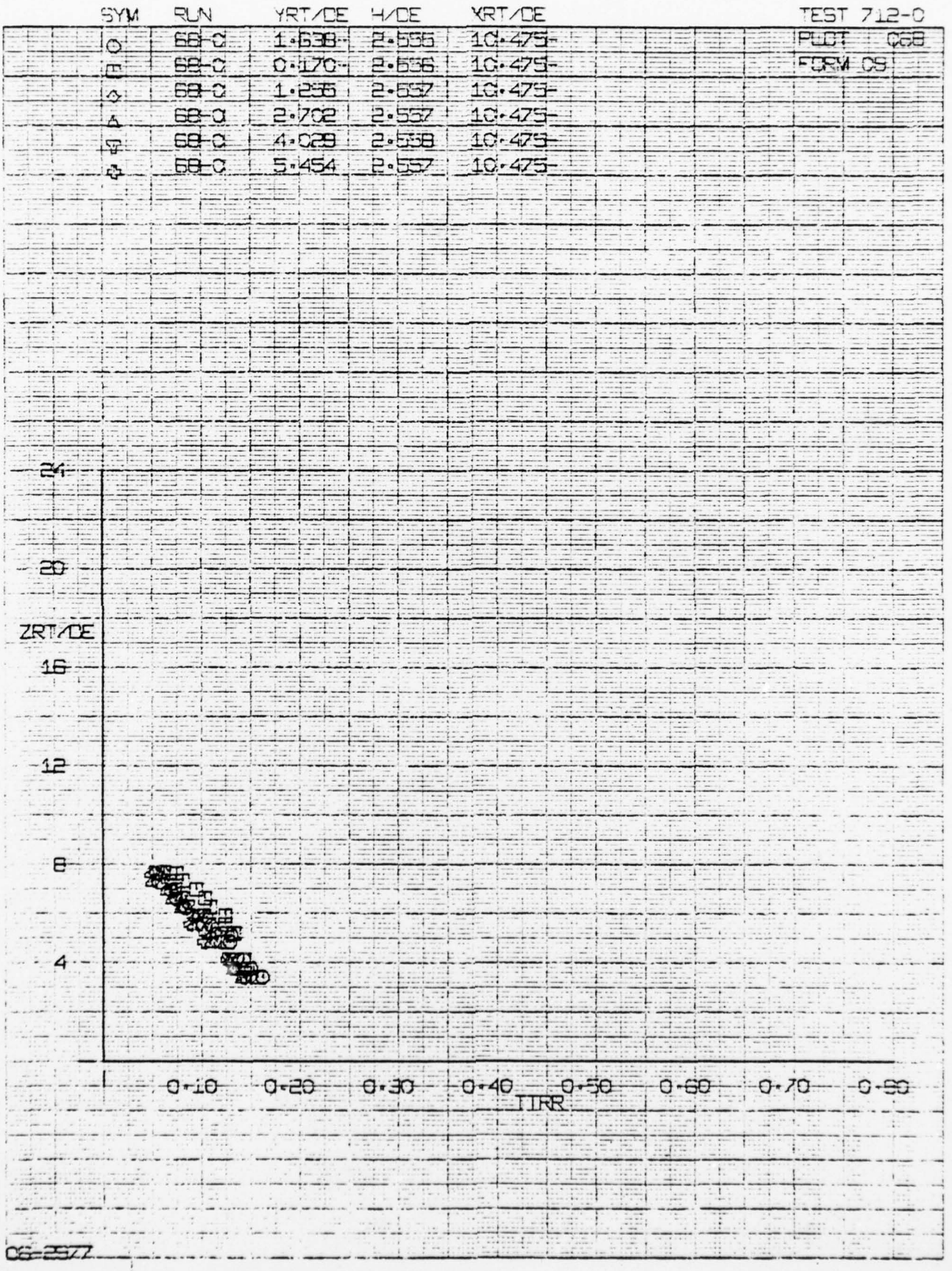


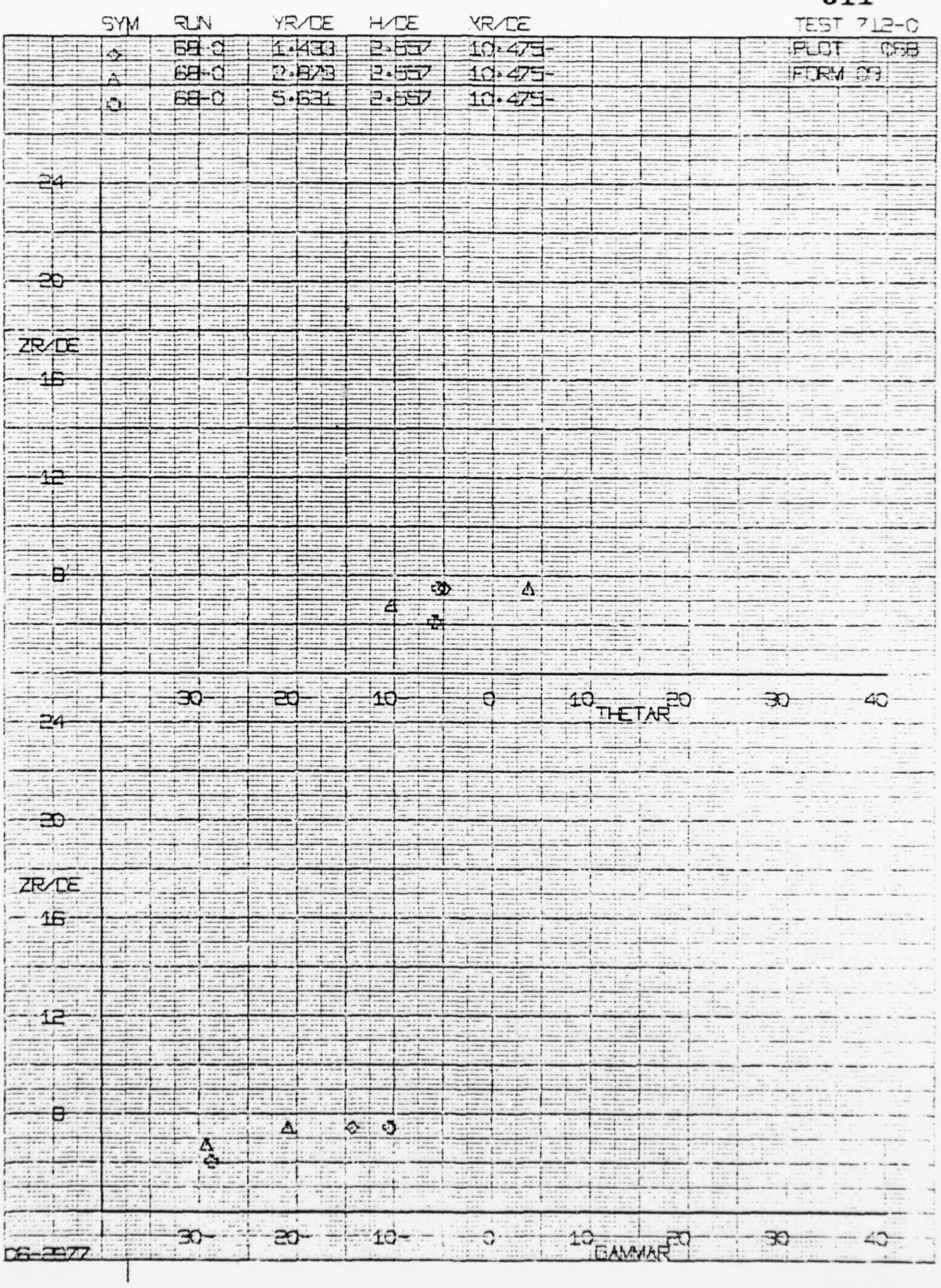

SYM RUN YR/DE H/DE XR/DE
67-0 1.433 5.026 1.383
67-0 0.038 5.026 1.383
67-0 1.404 5.026 1.383
67-0 2.816 5.026 1.383
67-0 4.305 5.026 1.383
67-0 5.695 5.026 1.383
TEST 712-0
PLOT 067
FORM 03
ZR/DE
24
20
16
12
8
-30
-20
-10
0
10
20
30
40
THETAR
GAMMAR
06-2977

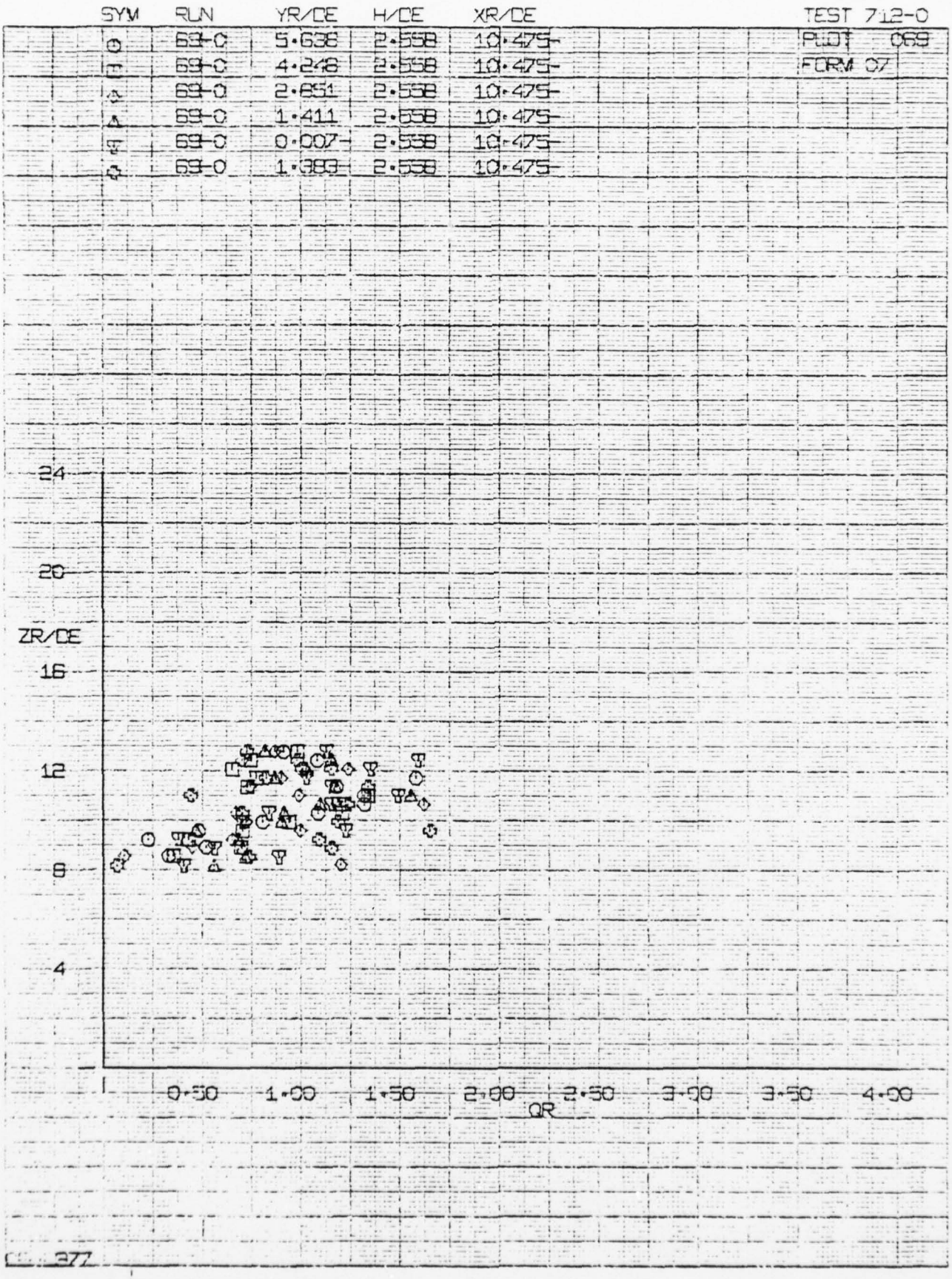
SYM	RUN	YR/DE	H/DE	XR/DE
◇	68-0	1.430	2.557	10.475-
△	68-0	2.673	2.557	10.475-
○	68-0	5.631	2.557	10.475-

TEST 712-0
PLOT 068
FORM 07




SYM RUN YRT/DE H/DE XRT/DE
68-0 1.638 2.535 10.475
68-0 0.170 2.636 10.475
68-0 1.256 2.637 10.475
68-0 2.702 2.557 10.475
68-0 4.029 2.538 10.475
68-0 5.454 2.557 10.475
TEST 712-0
PLOT C68
FORM 09
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TIRR
06-2577

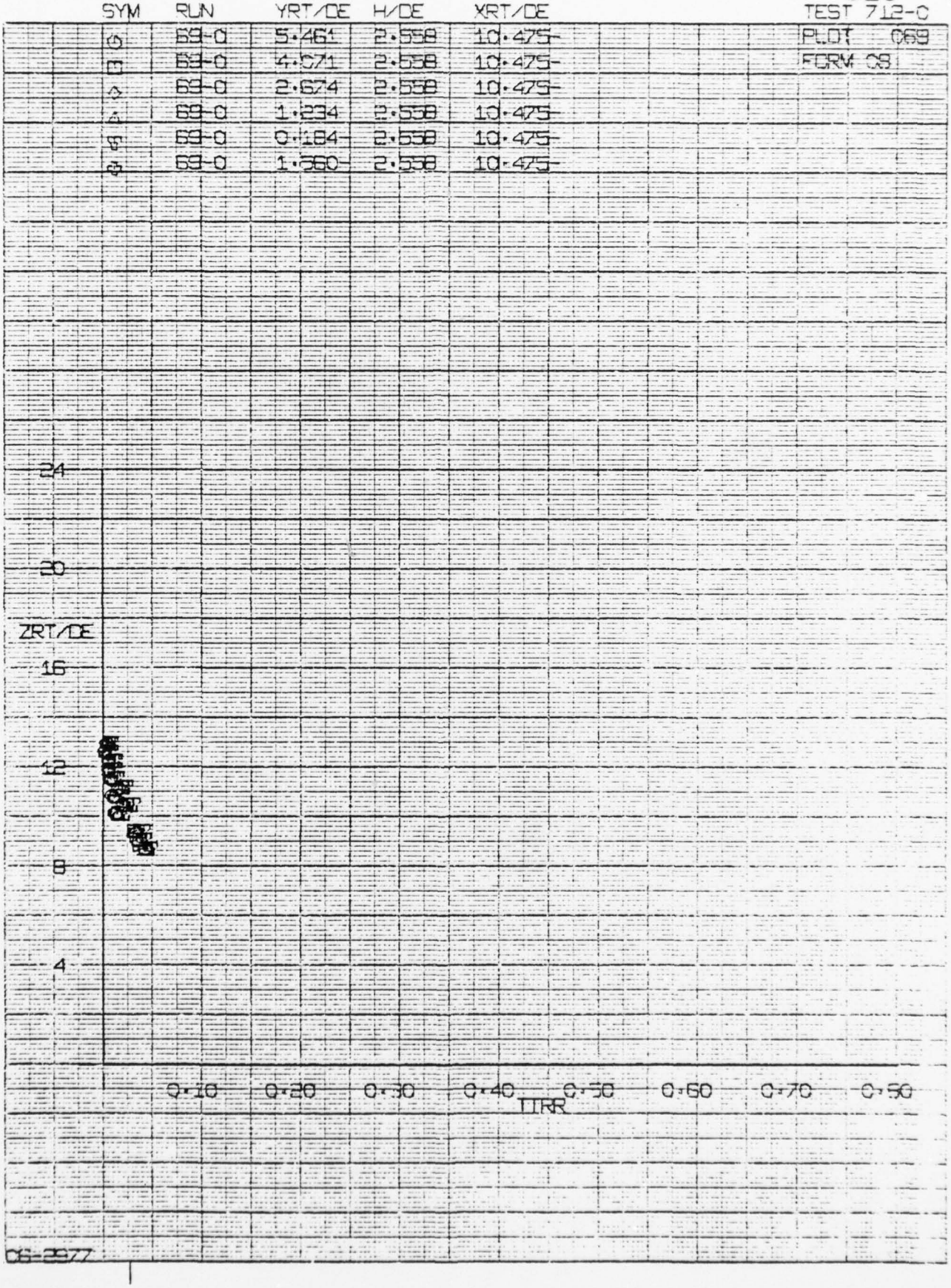

SYM RUN YR/DE H/DE XR/DE
TEST 712-0
PLOT 058
FORM 09
◇ 68-2 1.430 2.557 10.475-
△ 68-0 2.873 2.557 10.475-
○ 68-0 5.631 2.557 10.475-
ZR/DE
24
20
16
12
8
4
30- 20- 10- 0 10 20 30 40
THETAR
ZR/DE
24
20
16
12
8
30- 20- 10- 0 10 20 30 40
GAMMAR
06-2577


SYM RUN YR/DE H/DE XR/DE
63-0 5.638 2.558 10.475
63-0 4.248 2.558 10.475
63-0 2.851 2.558 10.475
63-0 1.411 2.558 10.475
63-0 0.007 2.558 10.475
63-0 1.383 2.558 10.475
TEST 712-0
PLOT 069
FORM 07
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
QR
377

TEST 712-C

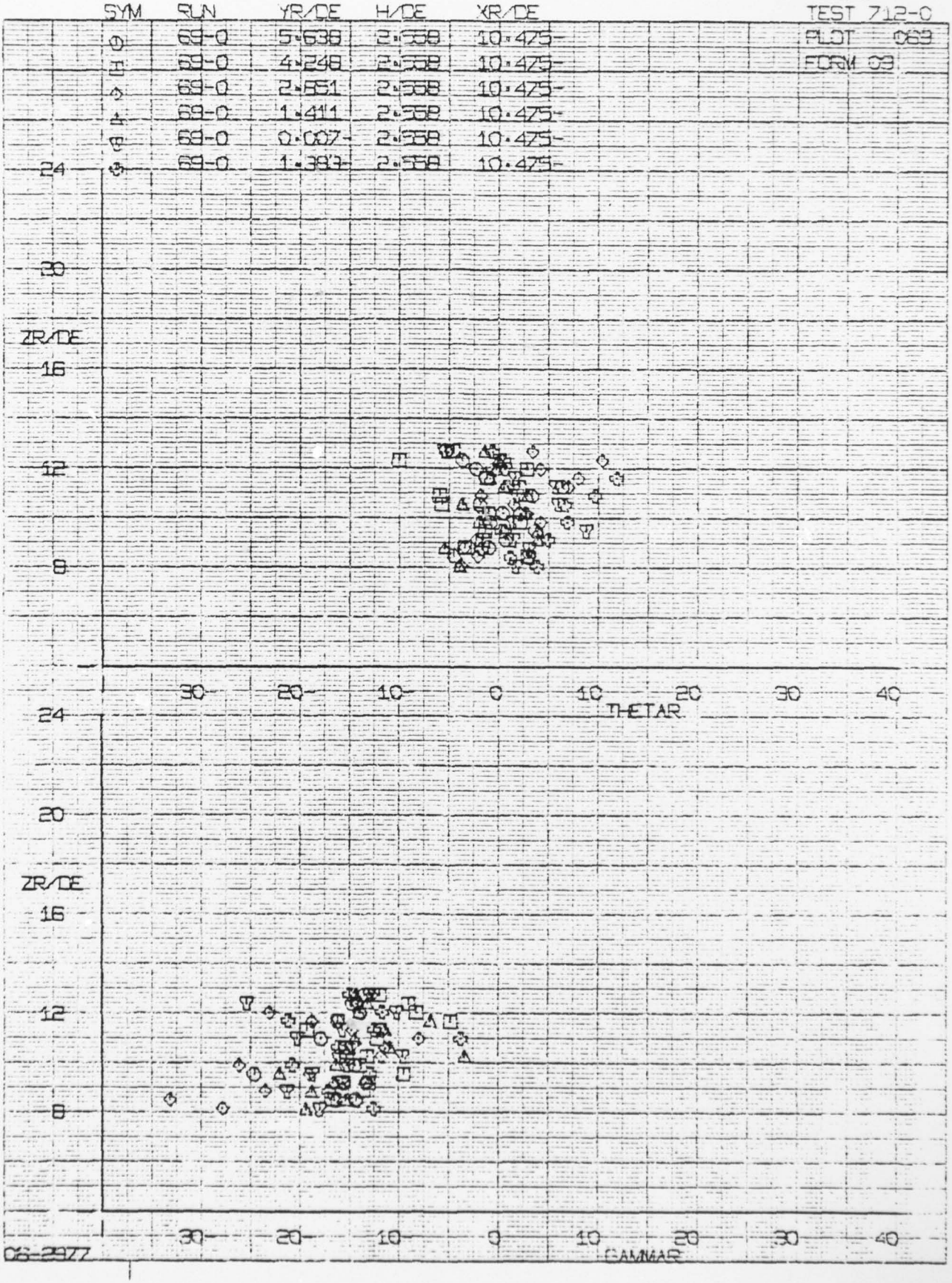
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	69-0	5.461	2.558	10.475-
□	69-0	4.071	2.558	10.475-
◇	69-0	2.674	2.558	10.475-
△	69-0	1.234	2.558	10.475-
▽	69-0	0.184-	2.558	10.475-
◁	69-0	1.360-	2.558	10.475-

PLOT 069
FORM 08



TEST 712-0
PLOT 063
FORM 09

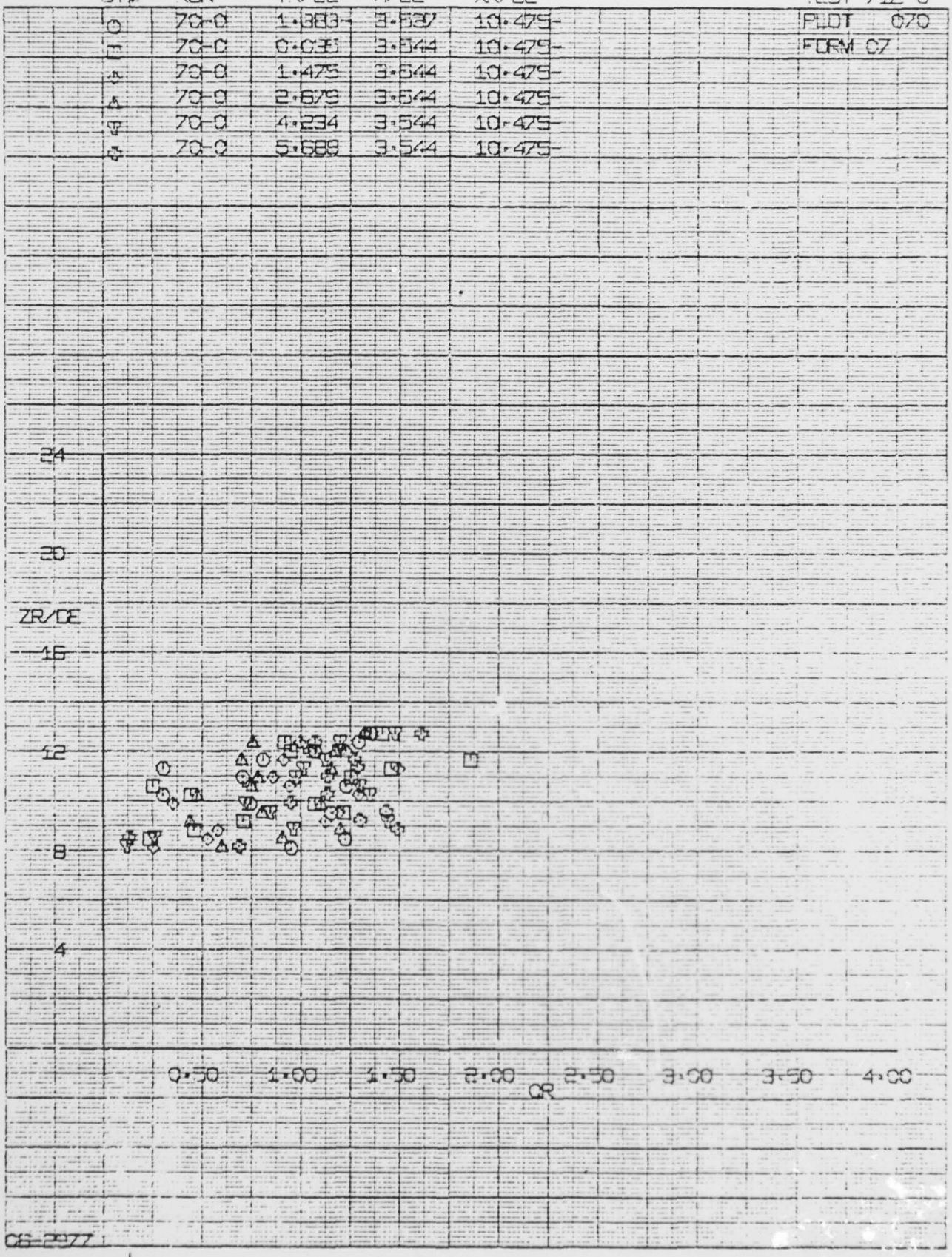
SYM	RUN	YR/DE	H/DE	XR/DE
◇	69-0	5.638	2.358	10.475-
□	69-0	4.248	2.358	10.475-
◇	69-0	2.851	2.358	10.475-
△	69-0	1.411	2.358	10.475-
▽	69-0	0.007-	2.358	10.475-
◇	69-0	1.383-	2.358	10.475-



06-2977

SYM	RUN	YR/DE	H/DE	XR/DE
○	70-0	1.383-	3.537	10.475-
□	70-0	0.035	3.544	10.475-
◇	70-0	1.475	3.544	10.475-
△	70-0	2.679	3.544	10.475-
▽	70-0	4.234	3.544	10.475-
☆	70-0	5.688	3.544	10.475-

TEST 712-0
PLOT 070
FORM 07

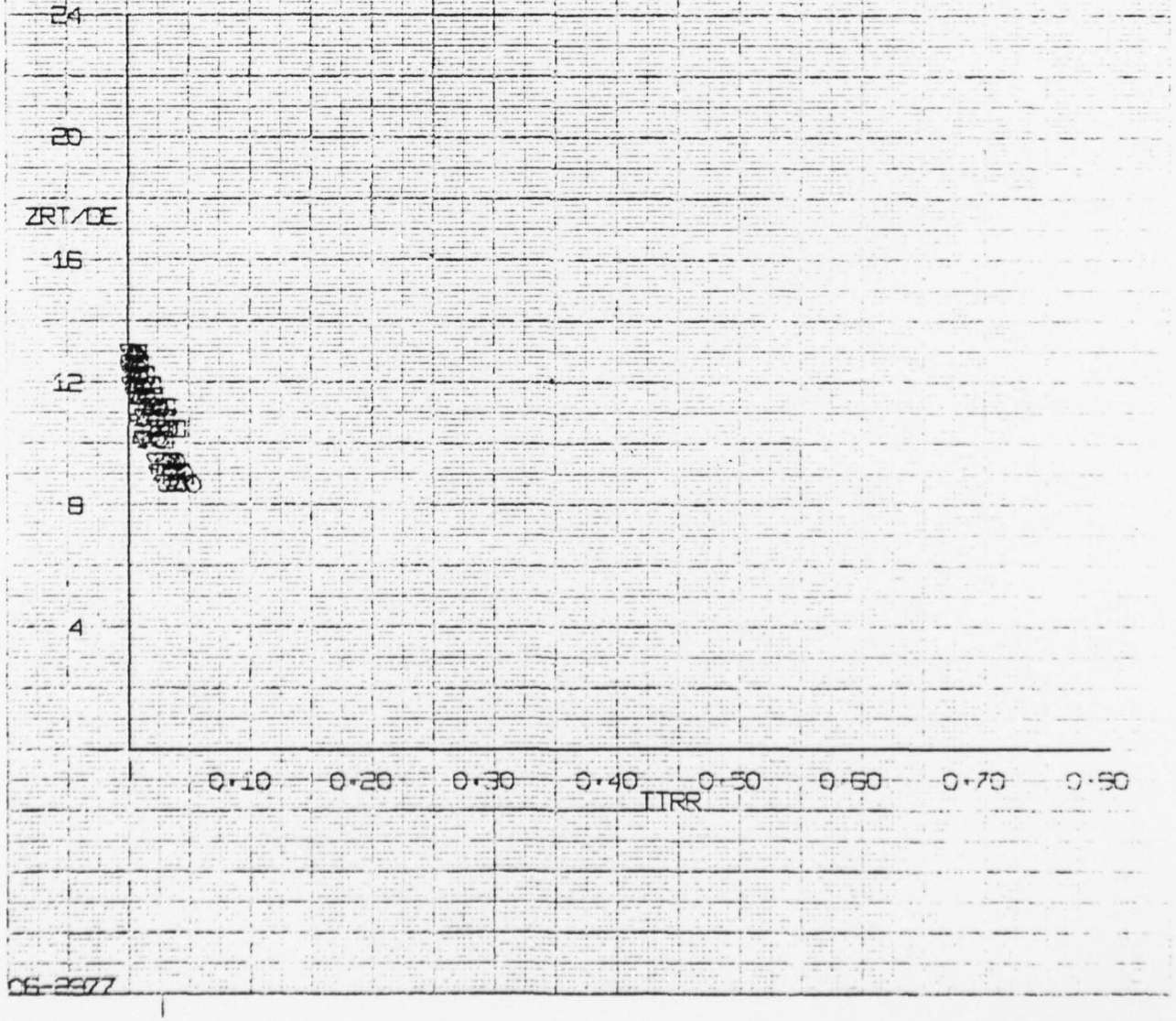


TEST 712-C

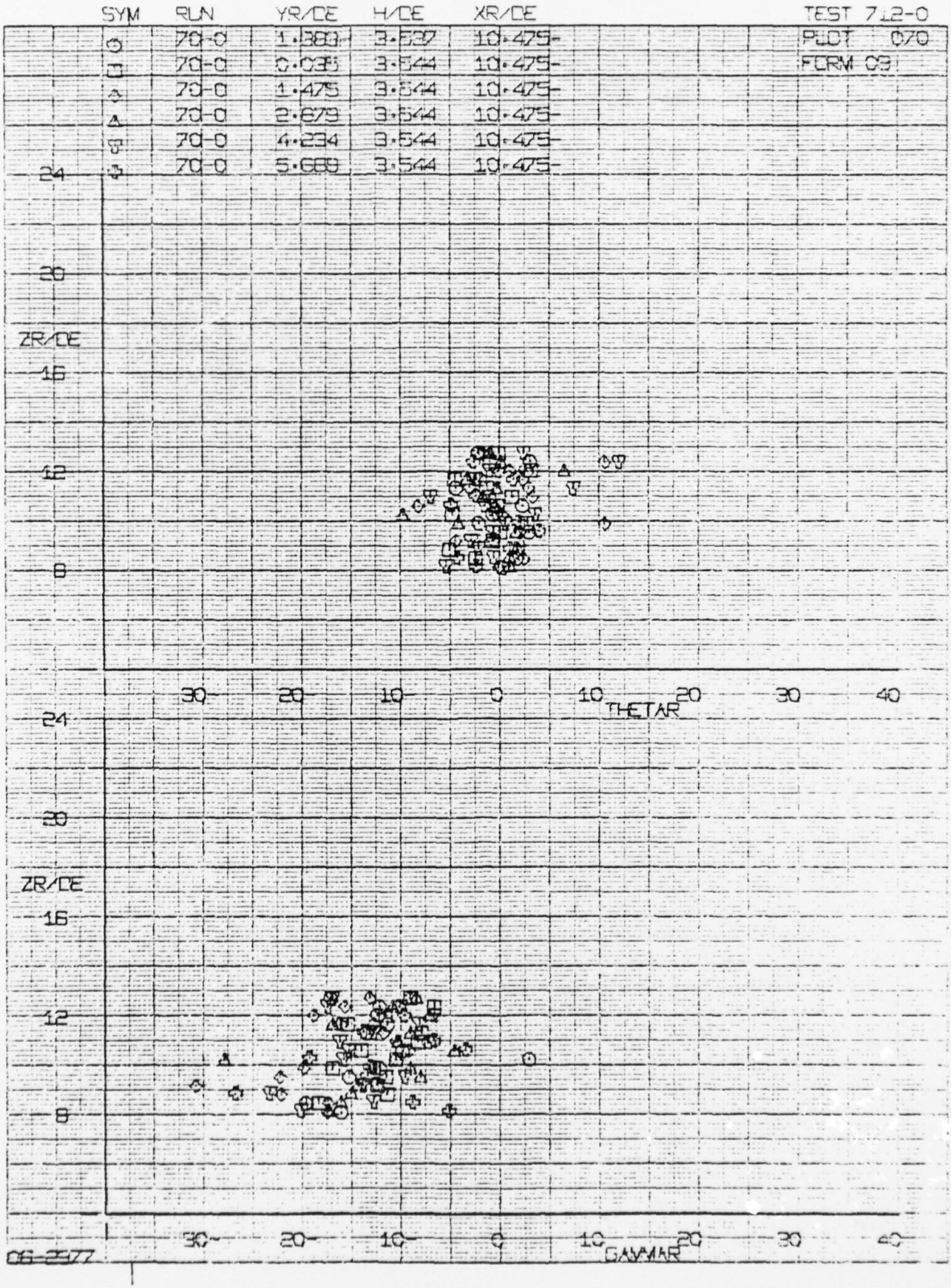
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	70-0	1.560	3.537	10.475
□	70-0	0.142	3.544	10.475
◇	70-0	1.298	3.544	10.475
△	70-0	2.702	3.544	10.475
▽	70-0	4.057	3.544	10.475
+	70-0	5.511	3.544	10.475

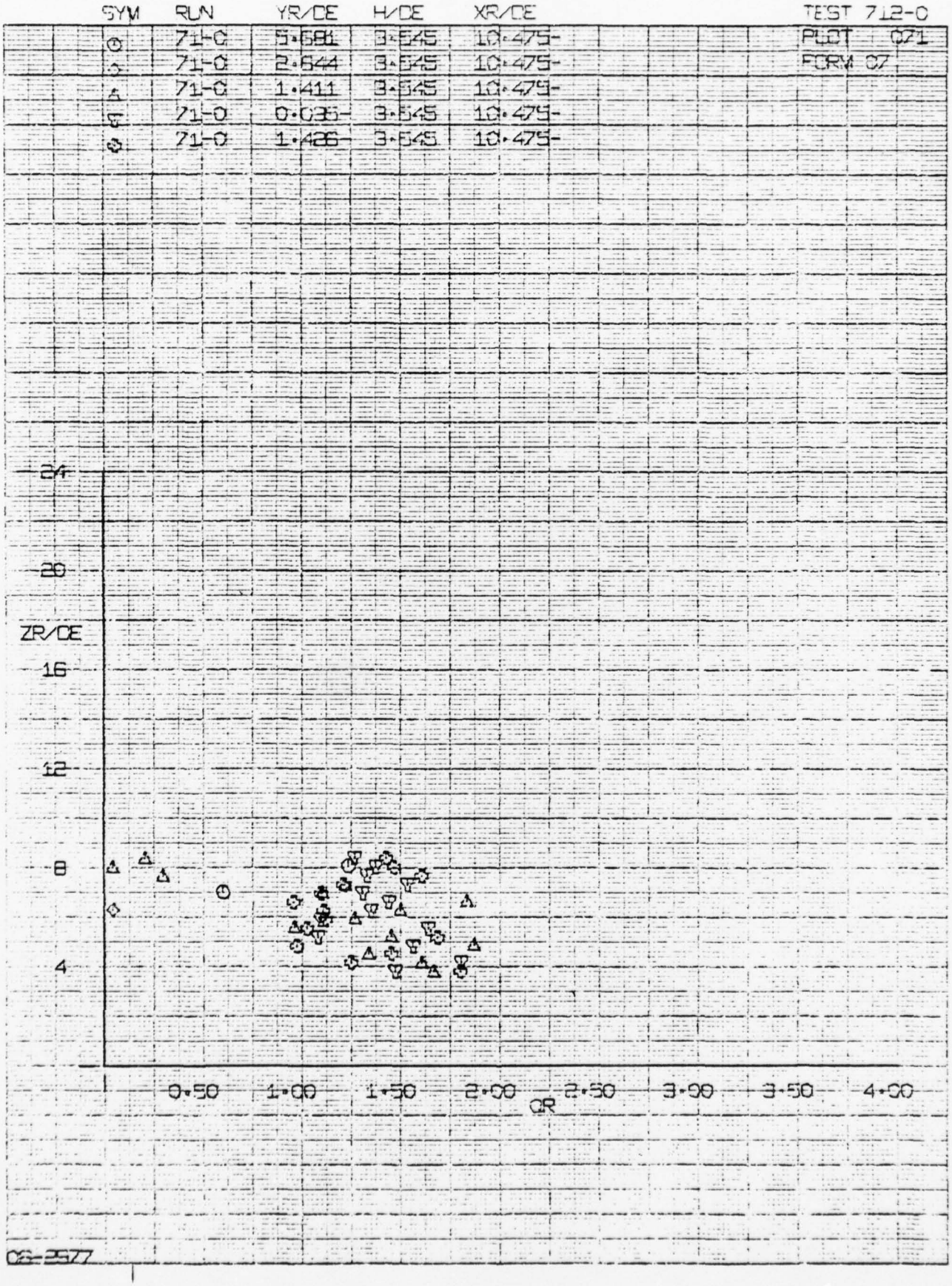
PLOT 070

FORM 09



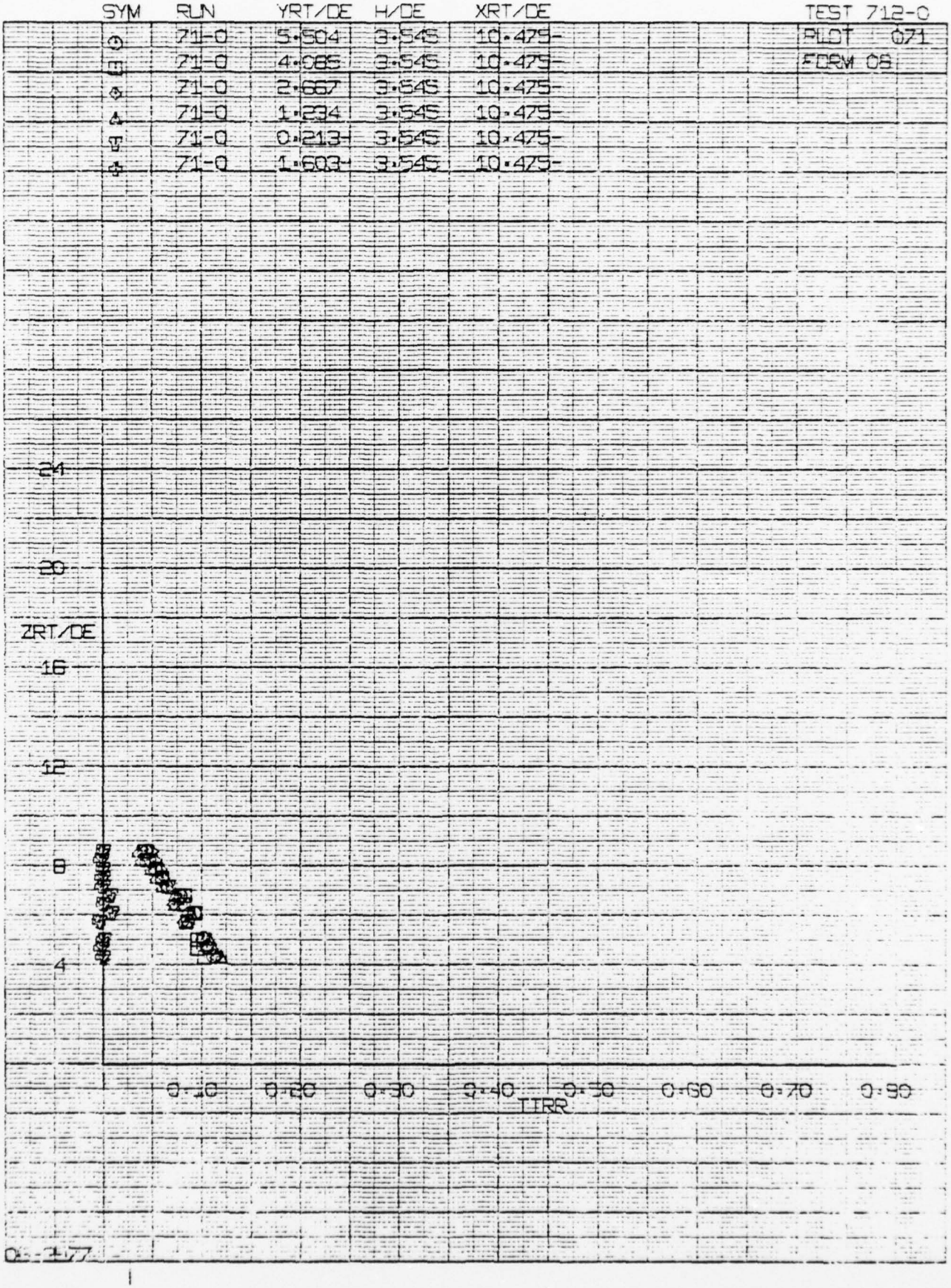
06-2977

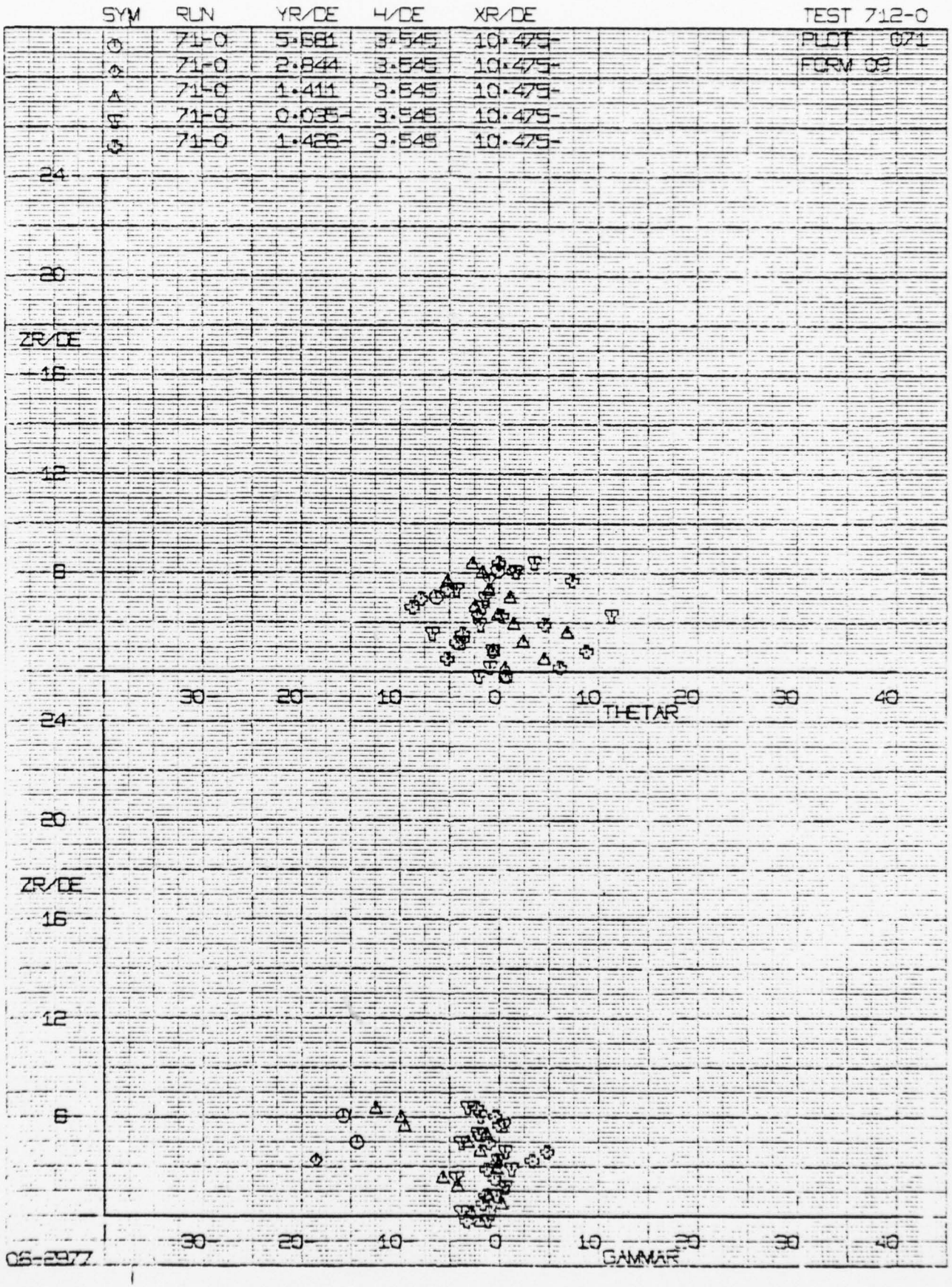

SYM RUN YR/DE H/DE XR/DE
TEST 712-0
PLOT 070
FORM 09
70-0 1.380 3.537 10.475
70-0 0.035 3.544 10.475
70-0 1.475 3.544 10.475
70-0 2.679 3.544 10.475
70-0 4.234 3.544 10.475
70-0 5.688 3.544 10.475
ZR/DE
24
20
16
12
8
-30 -20 -10 0 10 20 30 40
THETAR
ZR/DE
24
20
16
12
8
-30 -20 -10 0 10 20 30 40
GAMMAR
06-2577

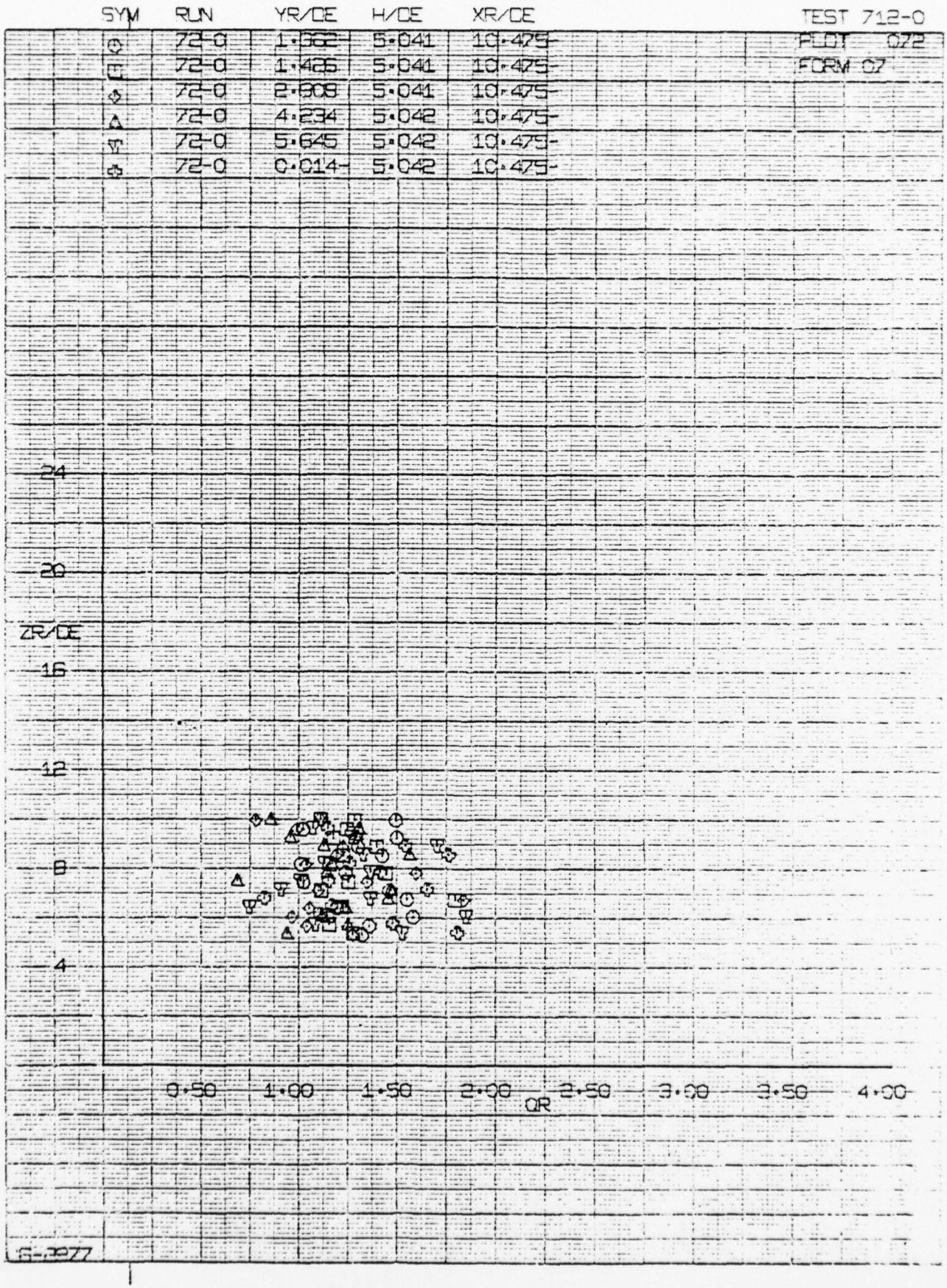

SYM RUN YR/DE H/DE XR/DE
71-0 5.681 3.545 10.475-
71-0 2.644 3.545 10.475-
71-0 1.411 3.545 10.475-
71-0 0.035- 3.545 10.475-
71-0 1.426- 3.545 10.475-
TEST 712-0
PLOT 021
FORM 07
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
QR
02-2577

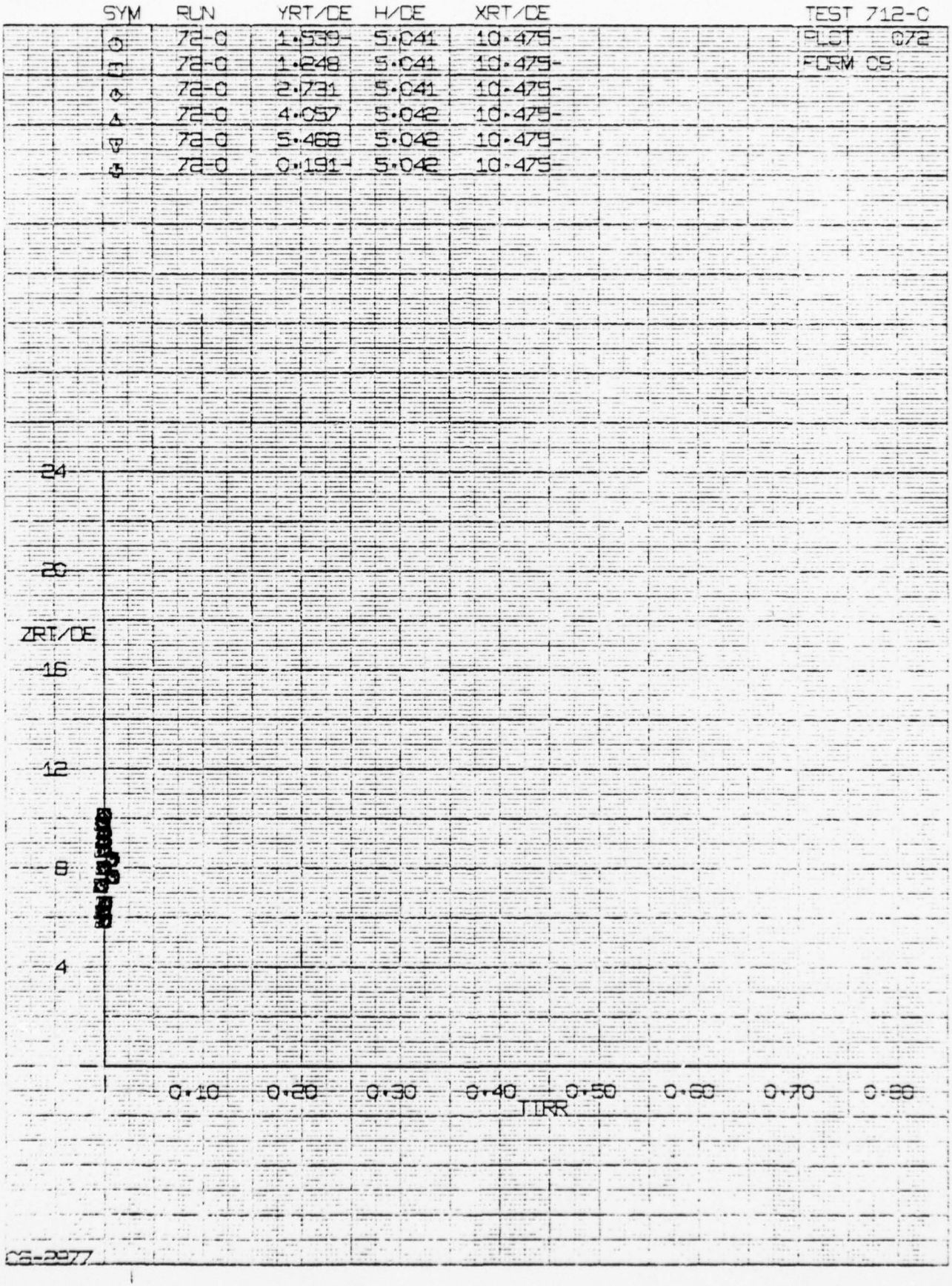
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	71-0	5.504	3.545	10.475
□	71-0	4.086	3.545	10.475
◇	71-0	2.667	3.545	10.475
△	71-0	1.234	3.545	10.475
▽	71-0	0.213	3.545	10.475
◁	71-0	1.603	3.545	10.475

TEST 712-0
PLOT 071
FORM 08



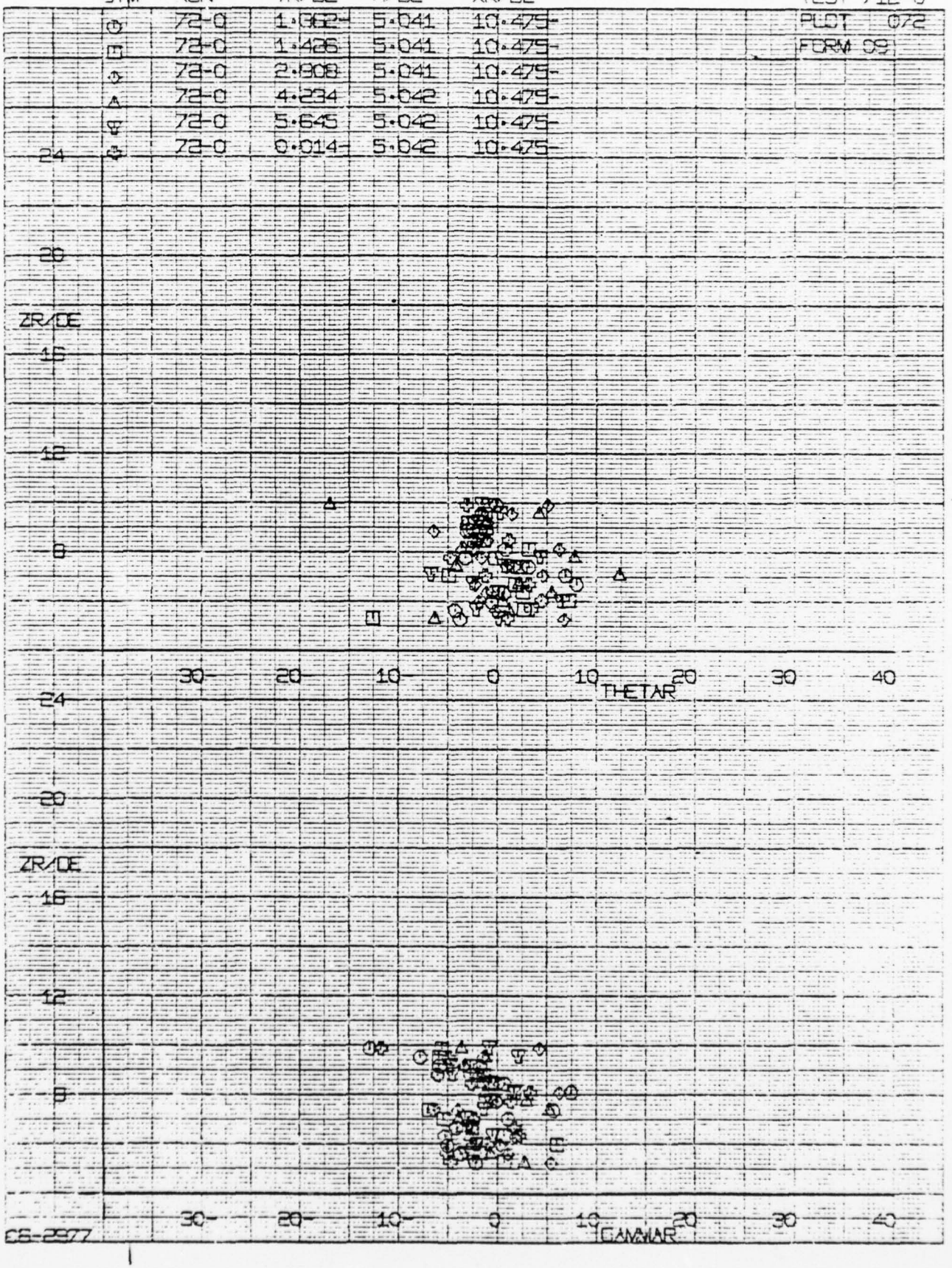

SYM RUN YR/DE H/DE XR/DE
71-0 5.681 3.545 10.475-
71-0 2.844 3.545 10.475-
71-0 1.411 3.545 10.475-
71-0 0.035- 3.545 10.475-
71-0 1.426- 3.545 10.475-
TEST 712-0
PLOT 071
FORM 09
ZR/DE
THETAR
GAMMAR
06-2977


SYM RUN YR/DE H/DE XR/DE
72-0 1.362 5.041 10.475-
72-0 1.426 5.041 10.475-
72-0 2.908 5.041 10.475-
72-0 4.234 5.042 10.475-
72-0 5.645 5.042 10.475-
72-0 0.014- 5.042 10.475-
TEST 712-0
PLOT 072
FORM 07
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
QR
6-2977


SYM RUN YRT/DE H/DE XRT/DE
72-0 1.539- 5.041 10.475-
72-0 1.248 5.041 10.475-
72-0 2.731 5.041 10.475-
72-0 4.057 5.042 10.475-
72-0 5.468 5.042 10.475-
72-0 0.191- 5.042 10.475-
TEST 712-C
PLOT 072
FORM 05
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TIRR
CS-2977

SYM	RUN	YR/DE	H/DE	XR/DE
○	72-0	1.062-	5.041	10.475-
□	72-0	1.426	5.041	10.475-
◇	72-0	2.808	5.041	10.475-
△	72-0	4.234	5.042	10.475-
▽	72-0	5.645	5.042	10.475-
◁	72-0	0.014-	5.042	10.475-

TEST 712-0
PLOT 072
FORM 09

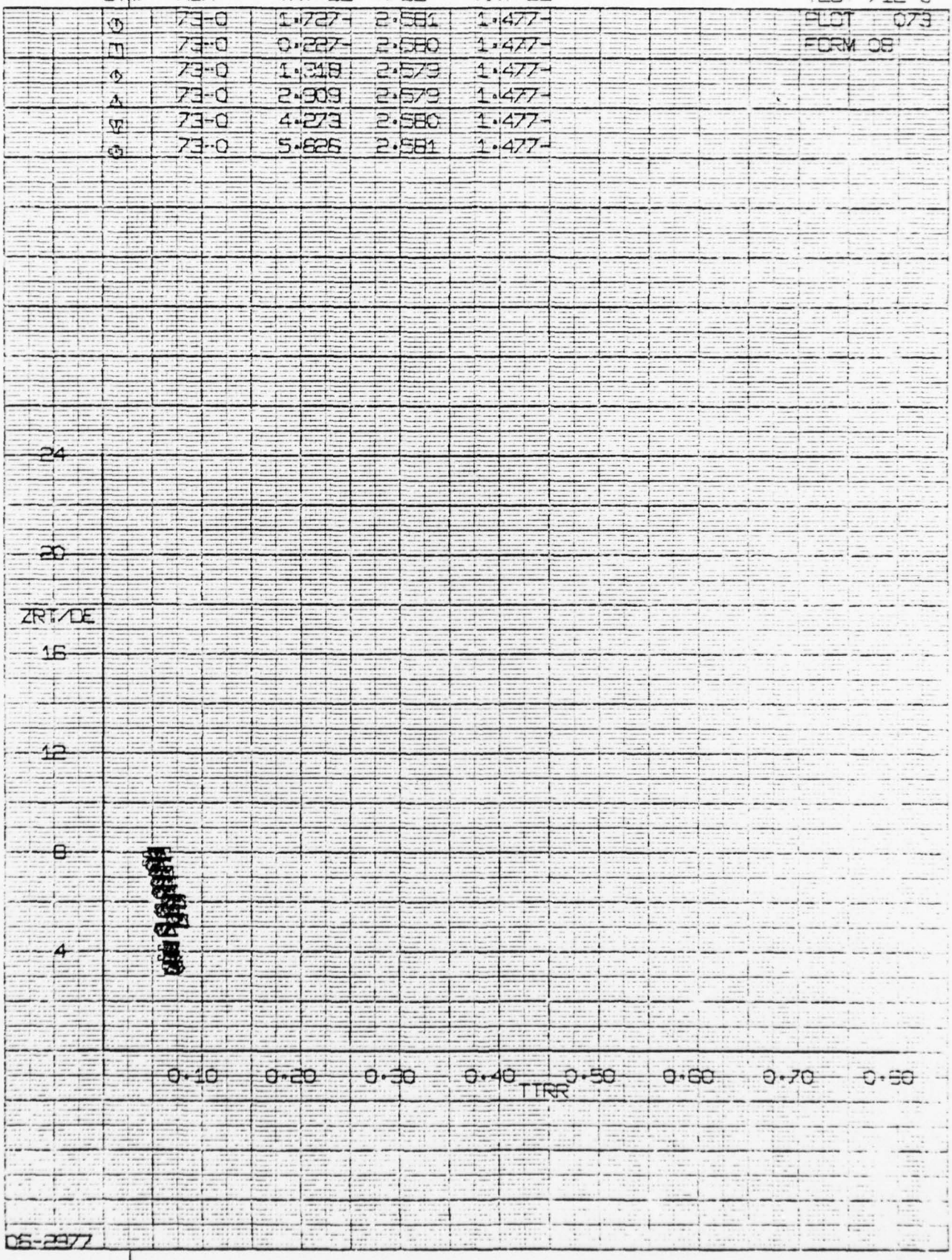


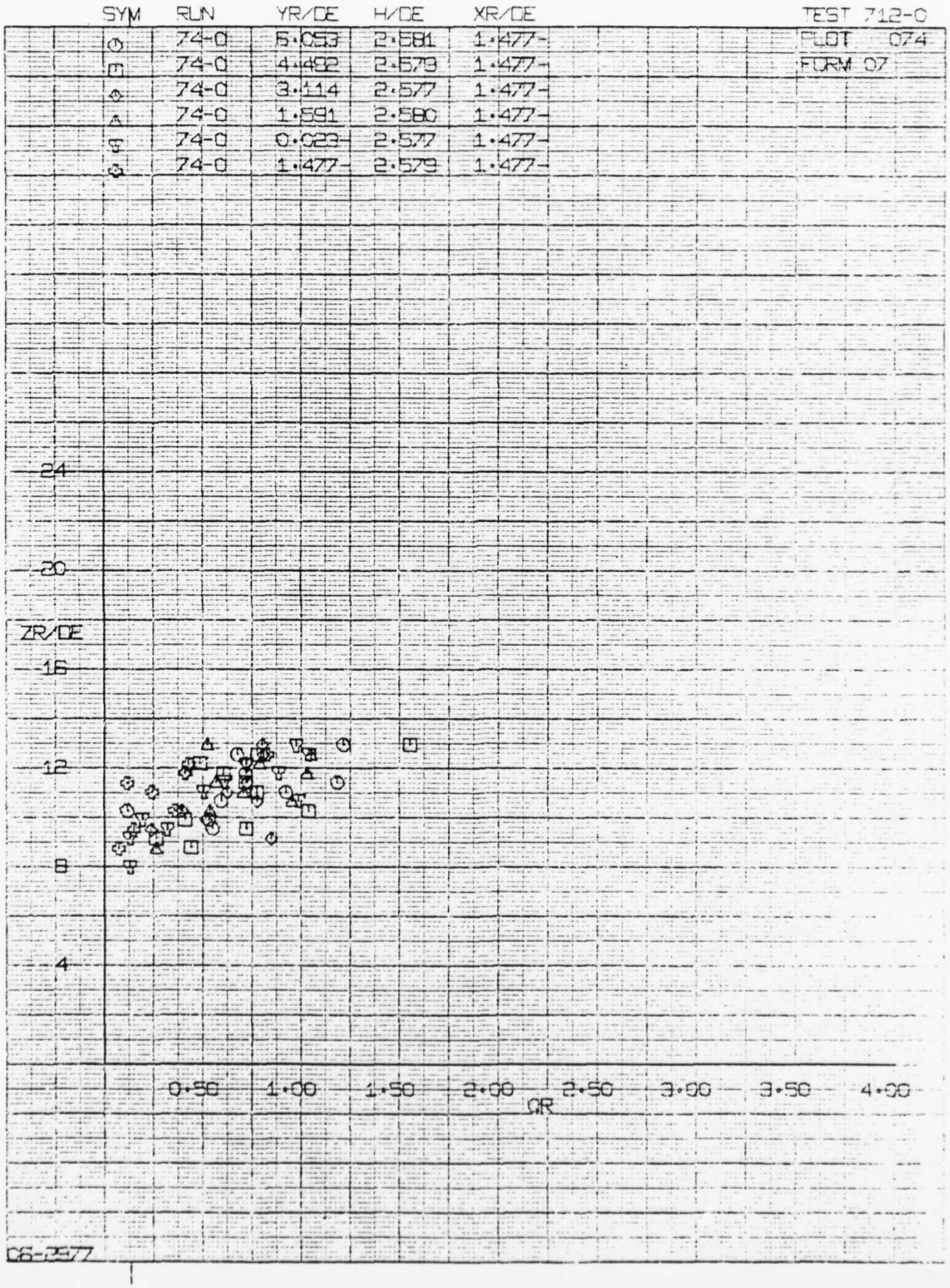
66-2977

TEST 712-0

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	73-0	1.727-	2.581	1.477-
□	73-0	0.227-	2.580	1.477-
◇	73-0	1.348	2.579	1.477-
△	73-0	2.309	2.579	1.477-
▽	73-0	4.273	2.580	1.477-
⊙	73-0	5.826	2.581	1.477-

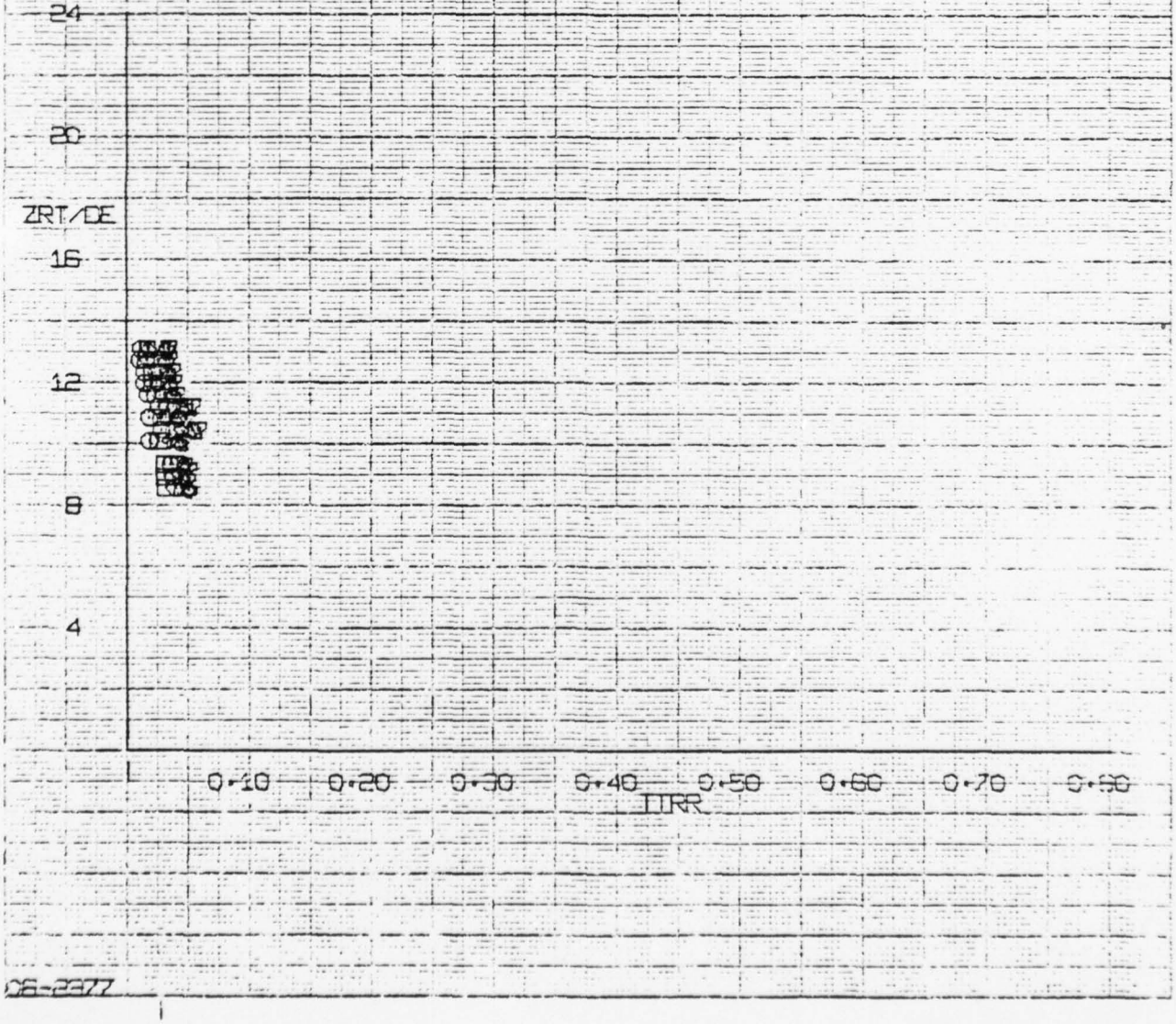
PLOT 079
FORM 08



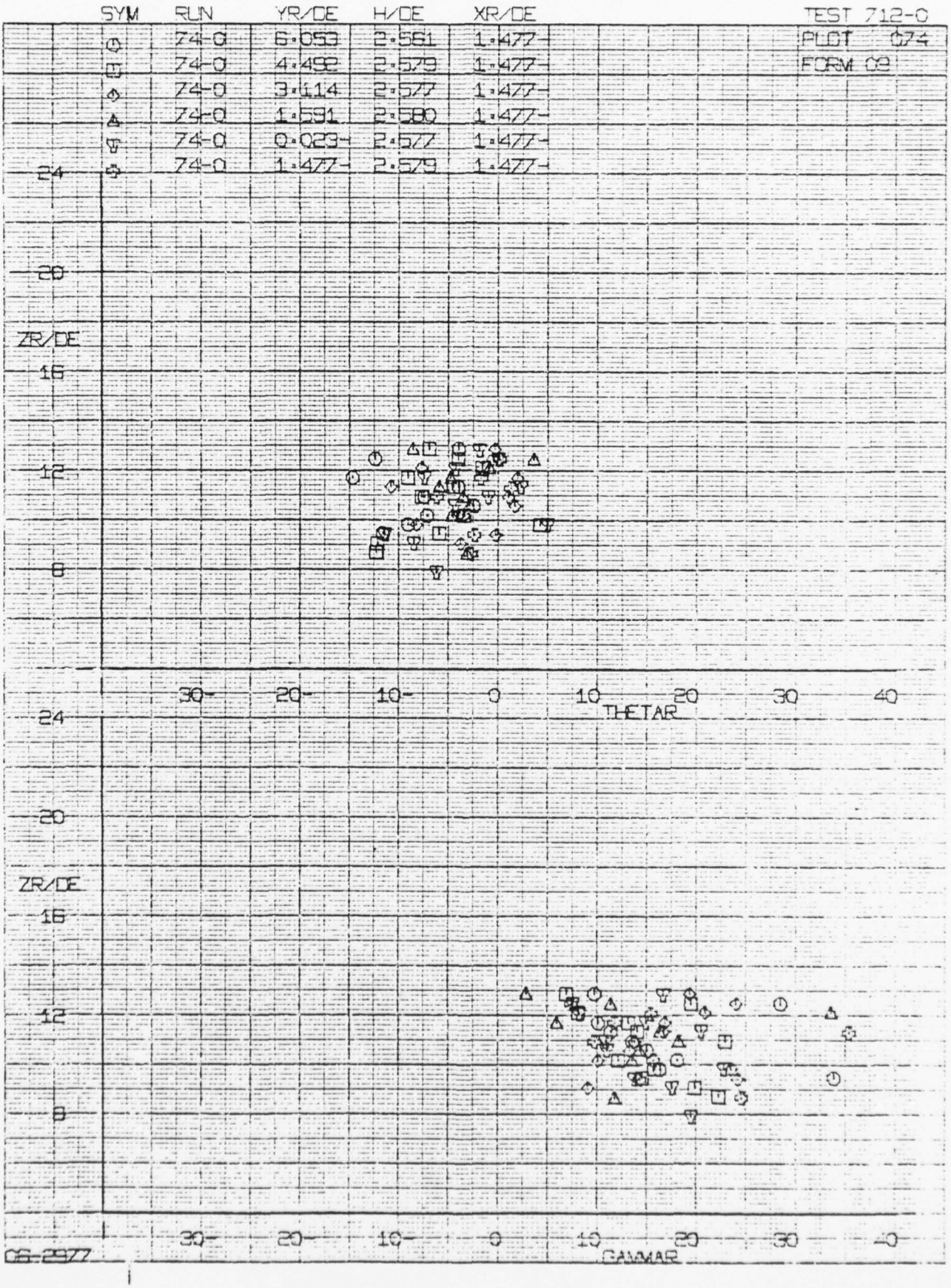

SYM RUN YR/DE H/DE XR/DE
74-0 5.053 2.581 1.477-
74-0 4.482 2.578 1.477-
74-0 3.114 2.577 1.477-
74-0 1.591 2.580 1.477-
74-0 0.023- 2.577 1.477-
74-0 1.477- 2.579 1.477-
TEST 712-0
PLOT 074
FORM 07
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
ΩR
06-2577

SYM	RUN	YRT/DE	H/DE	XRT/DE
⊙	74-0	5.664	2.581	1.477
□	74-0	4.303	2.579	1.477
◇	74-0	2.824	2.577	1.477
△	74-0	1.402	2.580	1.477
▽	74-0	0.212	2.577	1.477
⊕	74-0	1.667	2.579	1.477

TEST 712-0
PLOT 074
FORM 09

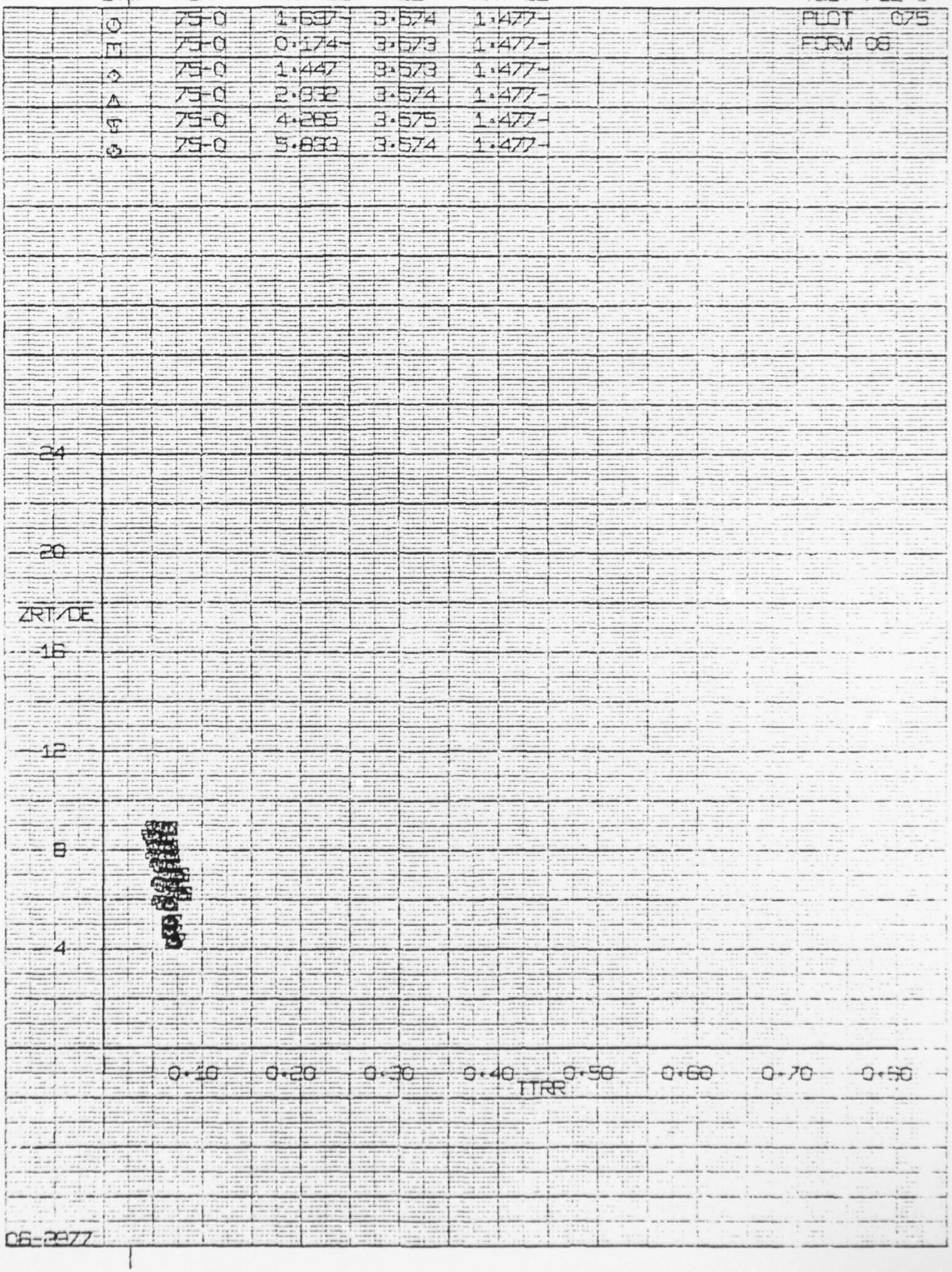


06-2377


SYM RUN YR/DE H/DE XR/DE
74-0 6.053 2.561 1.477-
74-0 4.492 2.579 1.477-
74-0 3.114 2.577 1.477-
74-0 1.591 2.580 1.477-
74-0 0.023- 2.577 1.477-
74-0 1.477- 2.579 1.477-
TEST 712-0
PLOT 074
FORM 02
ZR/DE
24
20
16
12
8
30- 20- 10- 0 10 20 30 40
THETAR
ZR/DE
24
20
16
12
8
30- 20- 10- 0 10 20 30 40
GAMMAR
06-2977

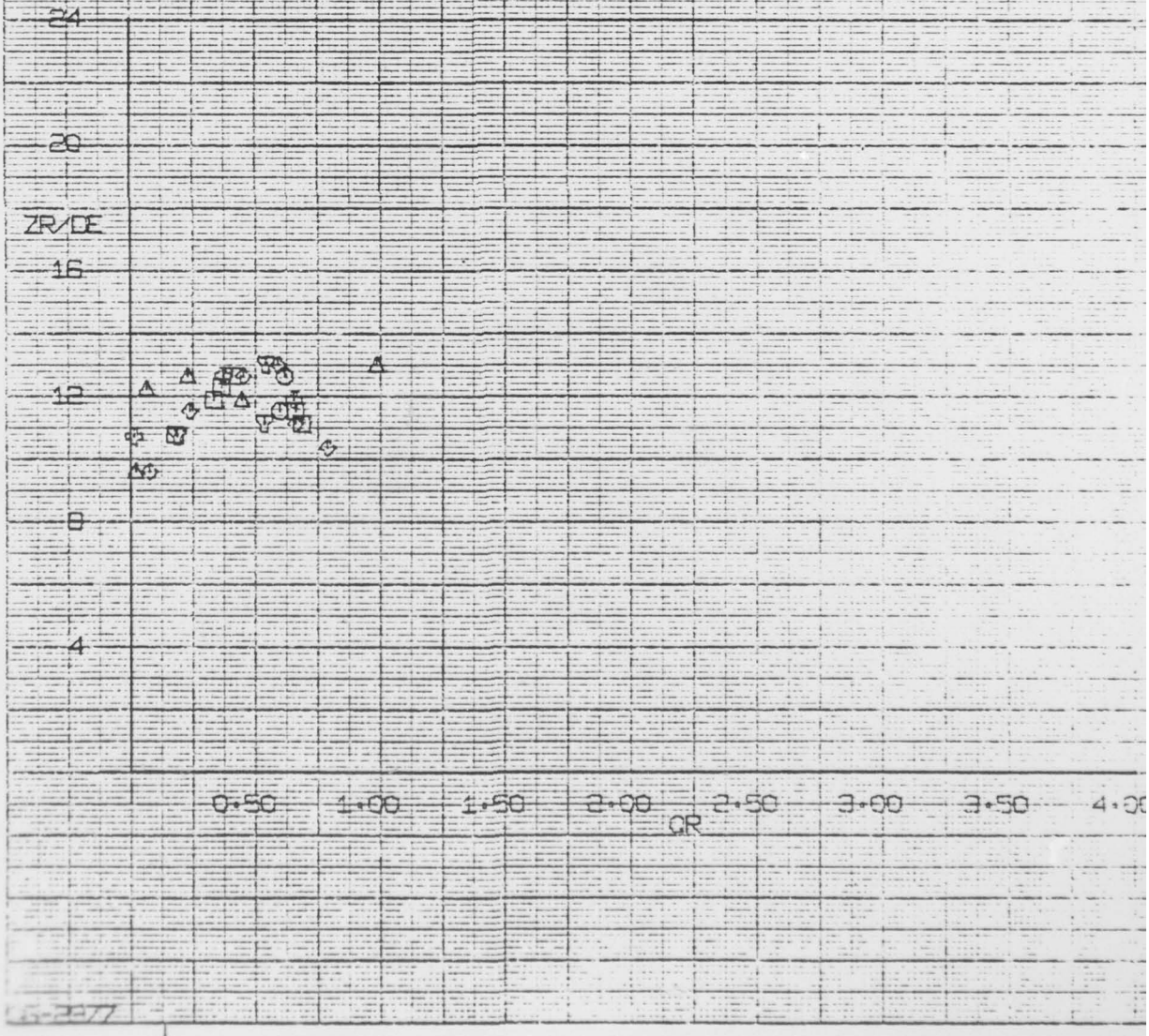
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	75-0	1.637	3.574	1.477
□	75-0	0.174	3.573	1.477
◇	75-0	1.447	3.573	1.477
△	75-0	2.832	3.574	1.477
▽	75-0	4.285	3.575	1.477
⊙	75-0	5.833	3.574	1.477

TEST 712-0
PLOT 075
FORM 08



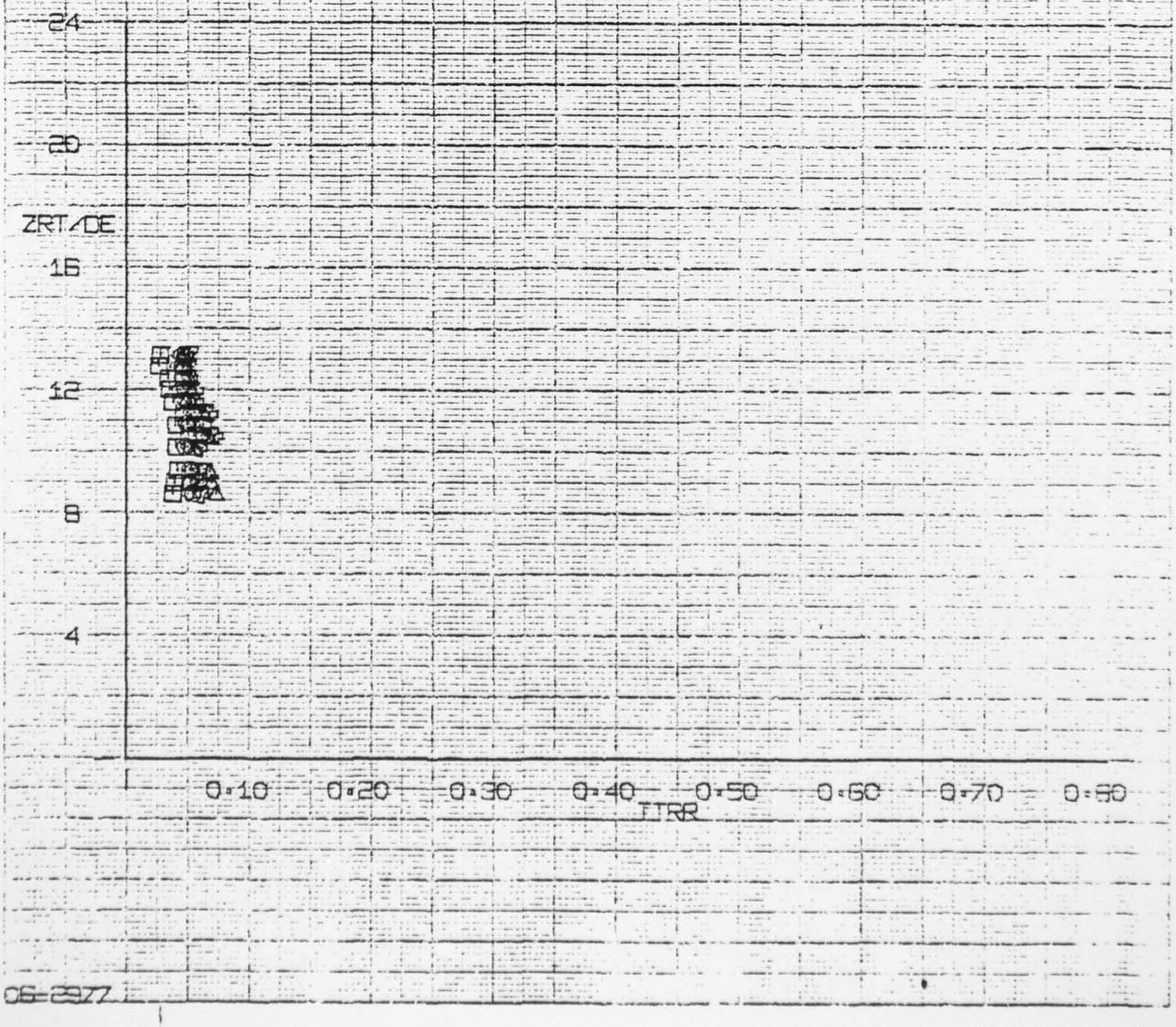
SYM	RUN	YR/DE	H/DE	XR/DE
○	76-0	5.030	3.574	1.477-
□	76-0	4.500	3.573	1.477-
◇	76-0	3.106	3.573	1.477-
△	76-0	1.576	3.571	1.477-
▽	76-0	0.053	3.572	1.477-
◁	76-0	1.508-	3.570	1.477-

TEST 712
PLOT 0
FORM 07

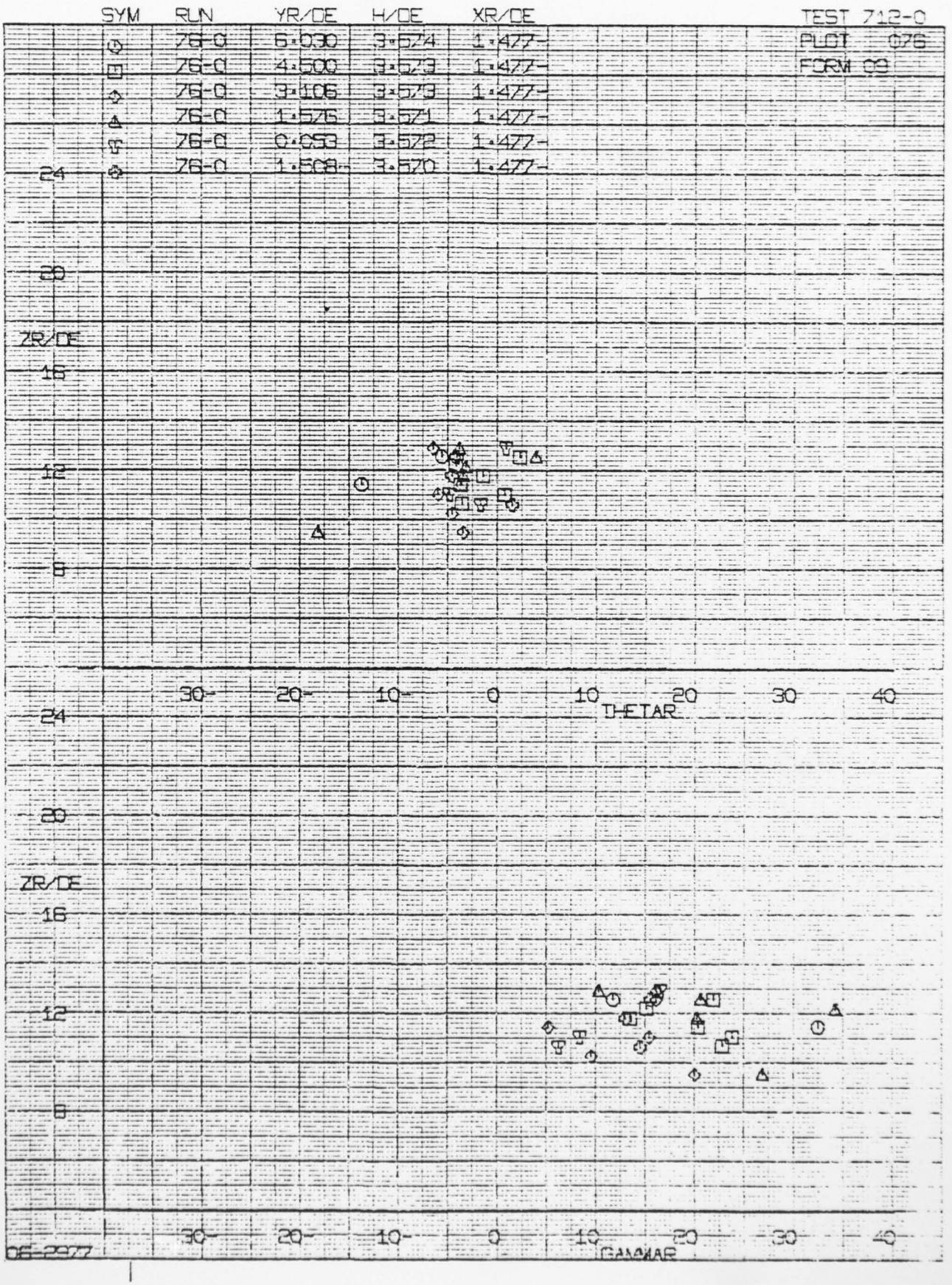


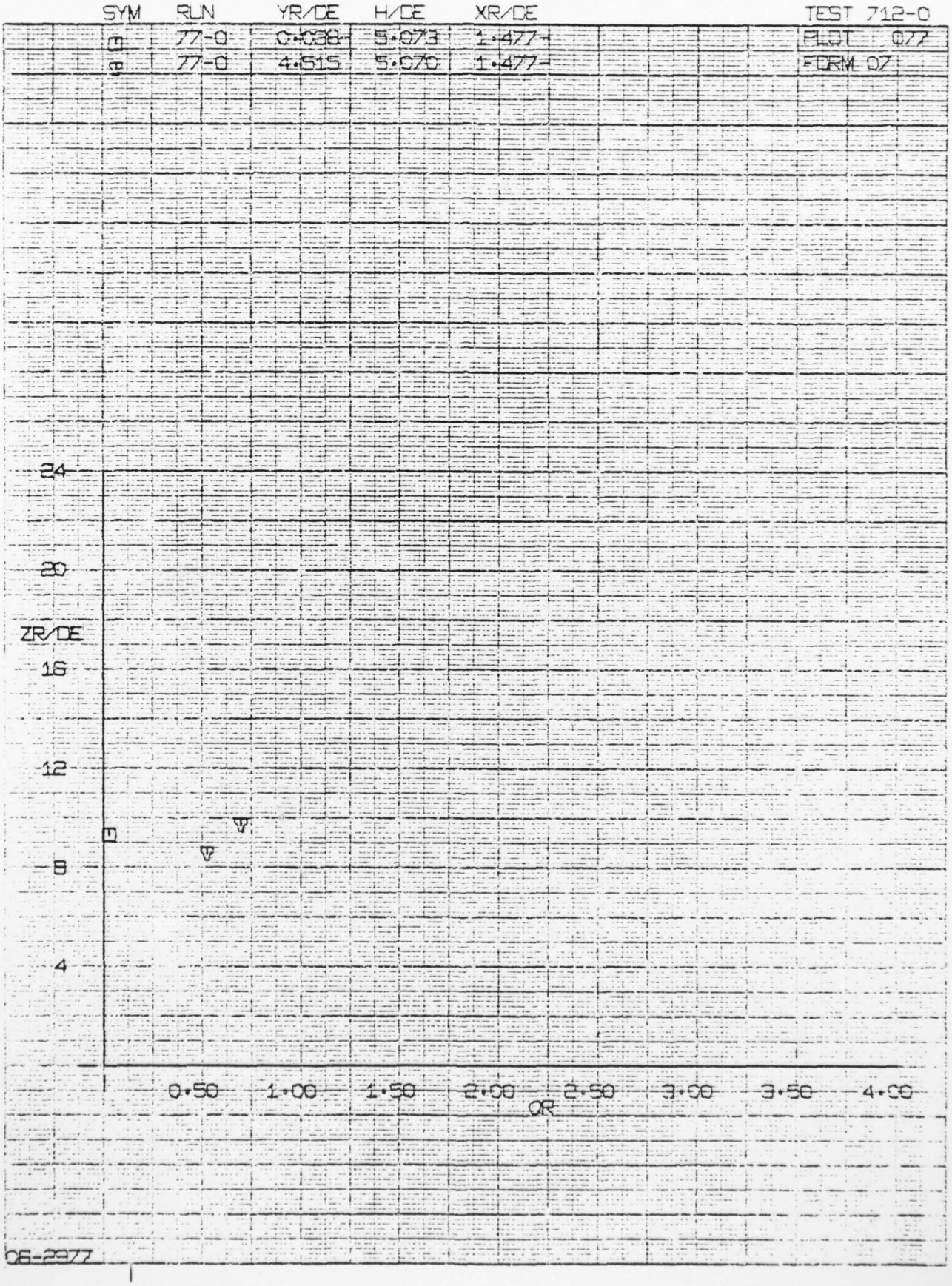
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	76-0	5.841	3.574	1.477-
□	76-0	4.311	3.573	1.477-
◇	76-0	2.817	3.573	1.477-
△	76-0	1.386	3.571	1.477-
▽	76-0	0.136-	3.572	1.477-
⊕	76-0	1.697-	3.570	1.477-

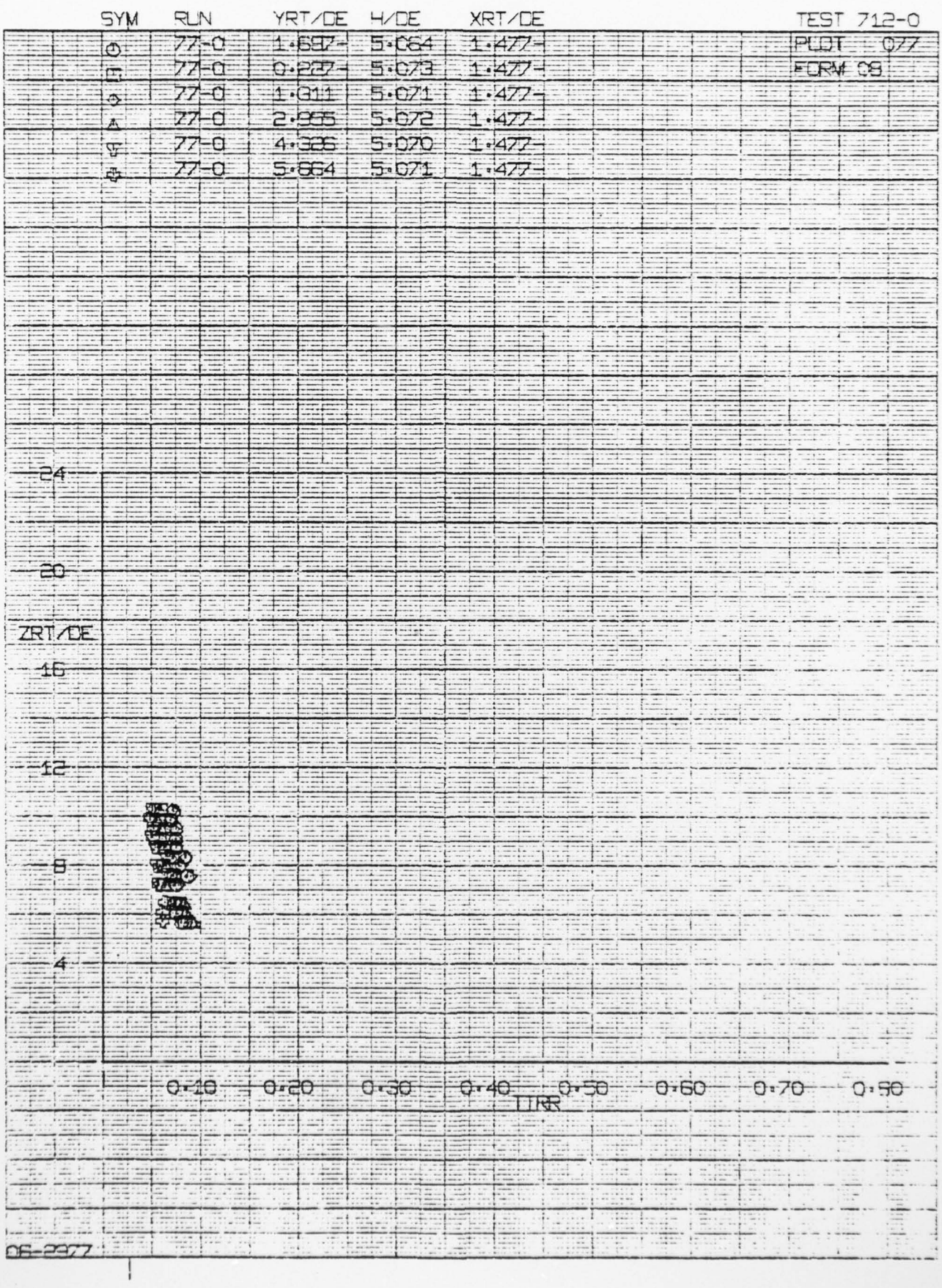
TEST 712-C
PLOT 076
FORM 08



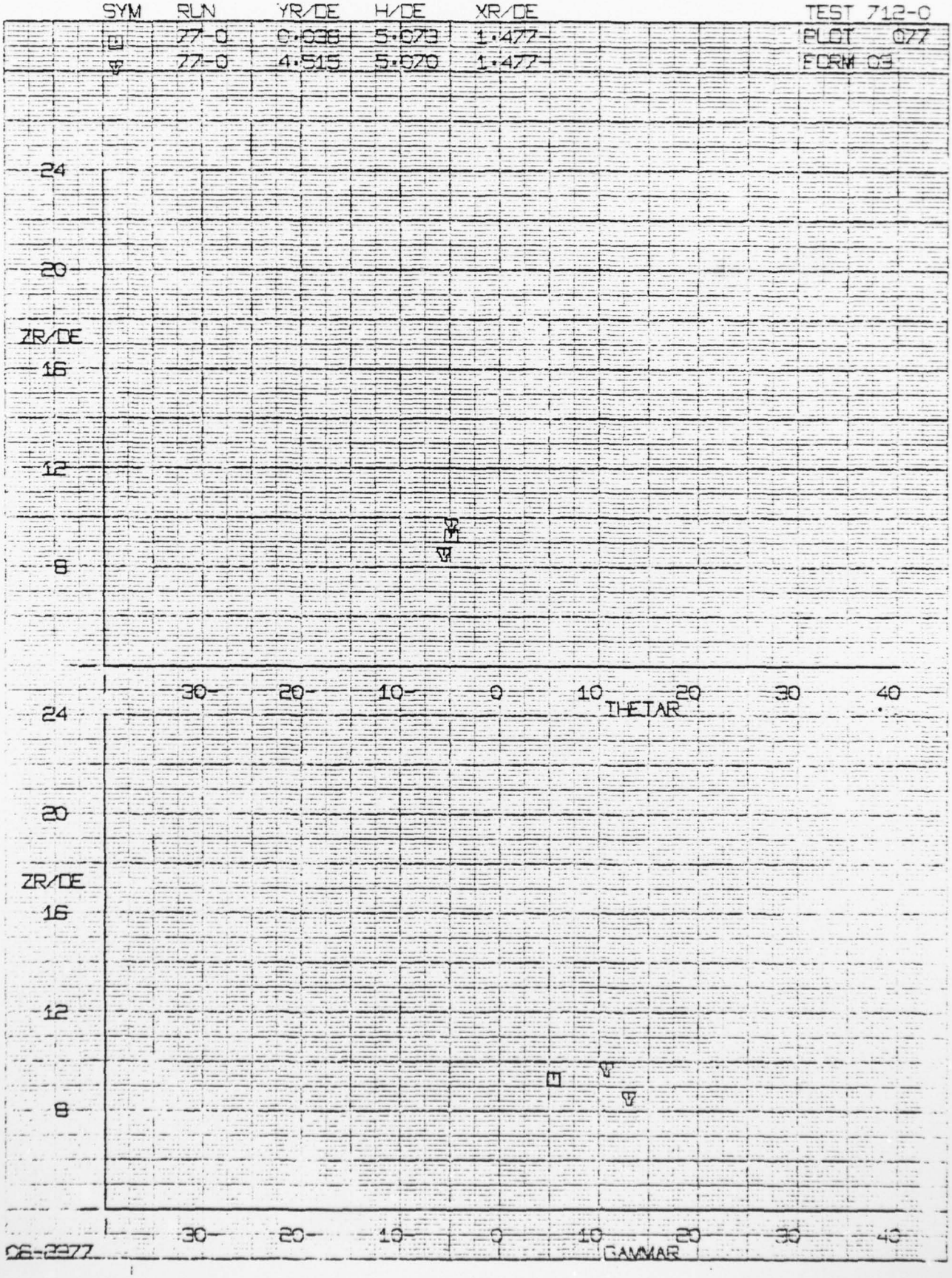
06-2977


SYM RUN YR/DE H/DE XR/DE
76-0 6.030 3.574 1.477-
76-0 4.500 3.573 1.477-
76-0 3.106 3.573 1.477-
76-0 1.576 3.571 1.477-
76-0 0.053 3.572 1.477-
76-0 1.508- 3.570 1.477-
TEST 712-0
PLOT 076
FORM 09
ZR/DE
THETAR
GAMMAR
06-2977


SYM RUN YR/DE H/DE XR/DE TEST 712-0
77-0 0.038 5.073 1.477 PLOT 077
77-0 4.515 5.070 1.477 FORM 07
24
20
ZR/DE
16
12
8
4
0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00
OR
06-2877


SYM RUN YRT/DE H/DE XRT/DE
77-0 1.687 5.064 1.477
77-0 0.227 5.073 1.477
77-0 1.011 5.071 1.477
77-0 2.365 5.072 1.477
77-0 4.386 5.070 1.477
77-0 5.664 5.071 1.477
TEST 712-0
PLOT 077
FORM 09
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TIME
06-2977

SYM	RUN	YR/DE	H/DE	XR/DE	TEST 712-0
□	77-0	0.038	5.073	1.477	PLOT 077
▽	77-0	4.515	5.070	1.477	FORM 03

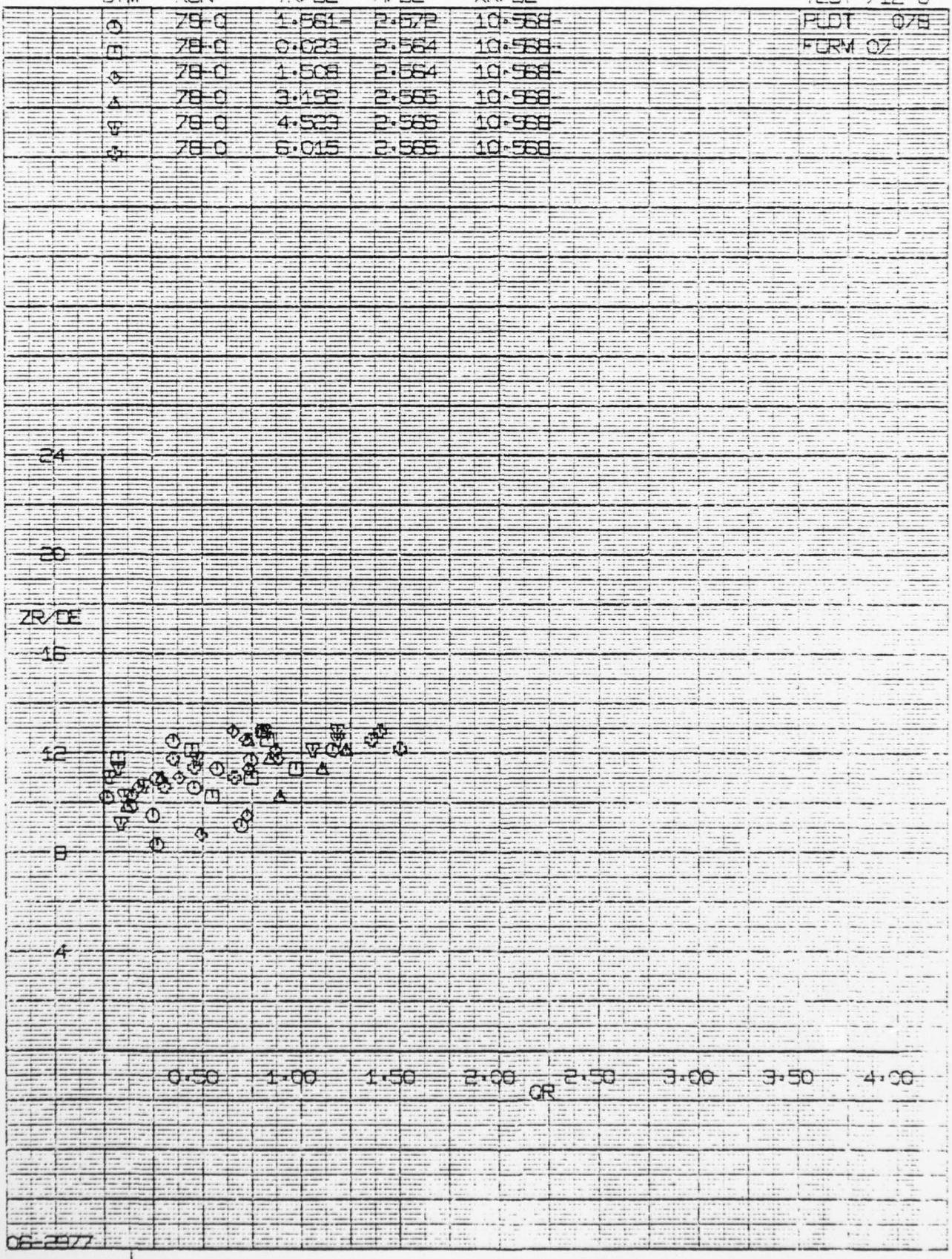


06-2277

TEST 712-0

SYM	RUN	YR/DE	H/DE	XR/DE
○	79-0	1.561	2.572	10.568
□	78-0	0.023	2.564	10.568
◇	78-0	1.508	2.564	10.568
△	78-0	3.152	2.565	10.568
▽	78-0	4.523	2.565	10.568
☆	78-0	6.015	2.565	10.568

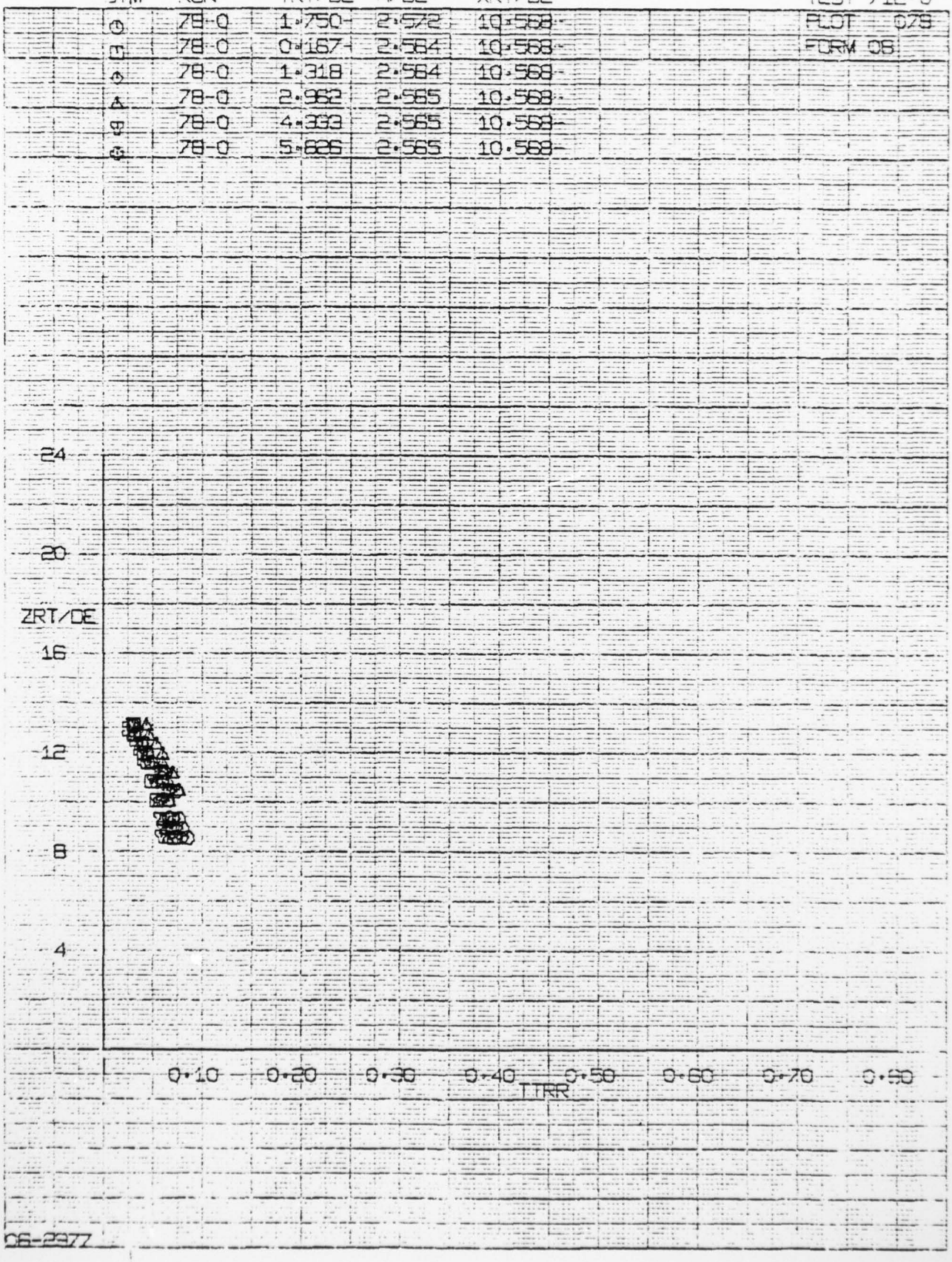
PLOT 078
FORM 07

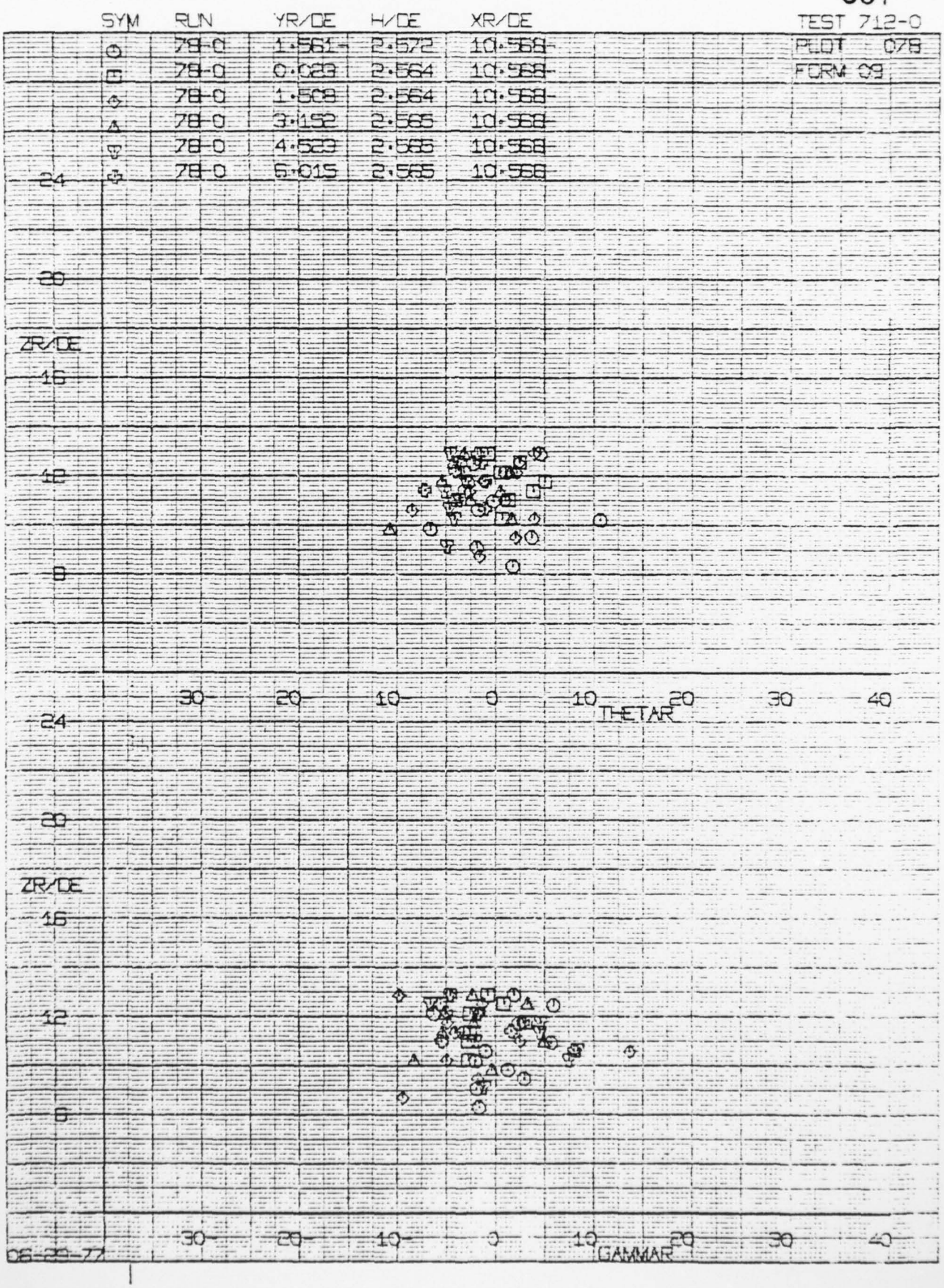


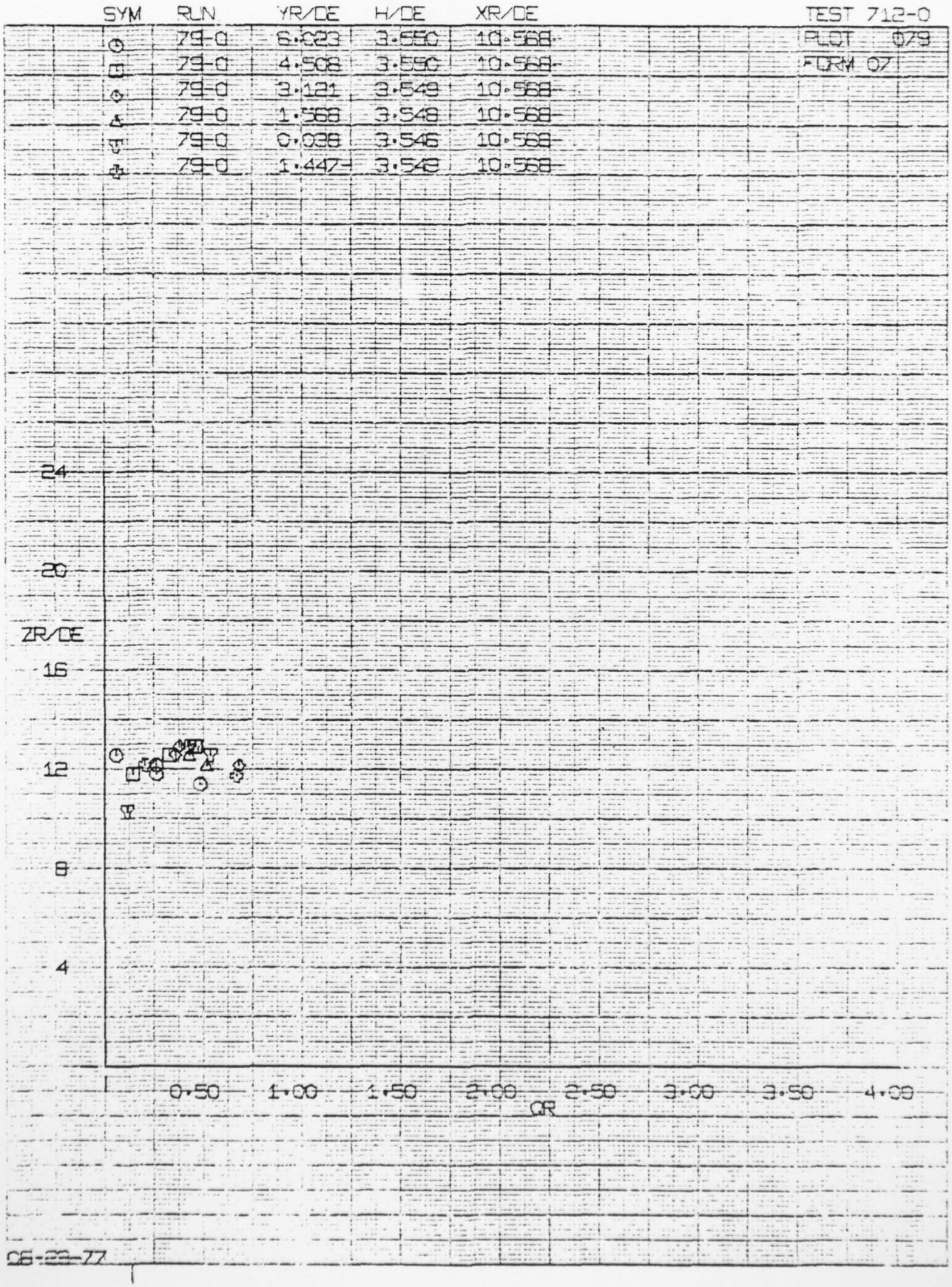
06-2977

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	78-0	1.750	2.572	10.568
□	78-0	0.167	2.564	10.568
◇	78-0	1.318	2.564	10.568
△	78-0	2.962	2.565	10.568
▽	78-0	4.333	2.565	10.568
⊙	78-0	5.626	2.565	10.568

TEST 712-0
PLOT 029
FORM 06

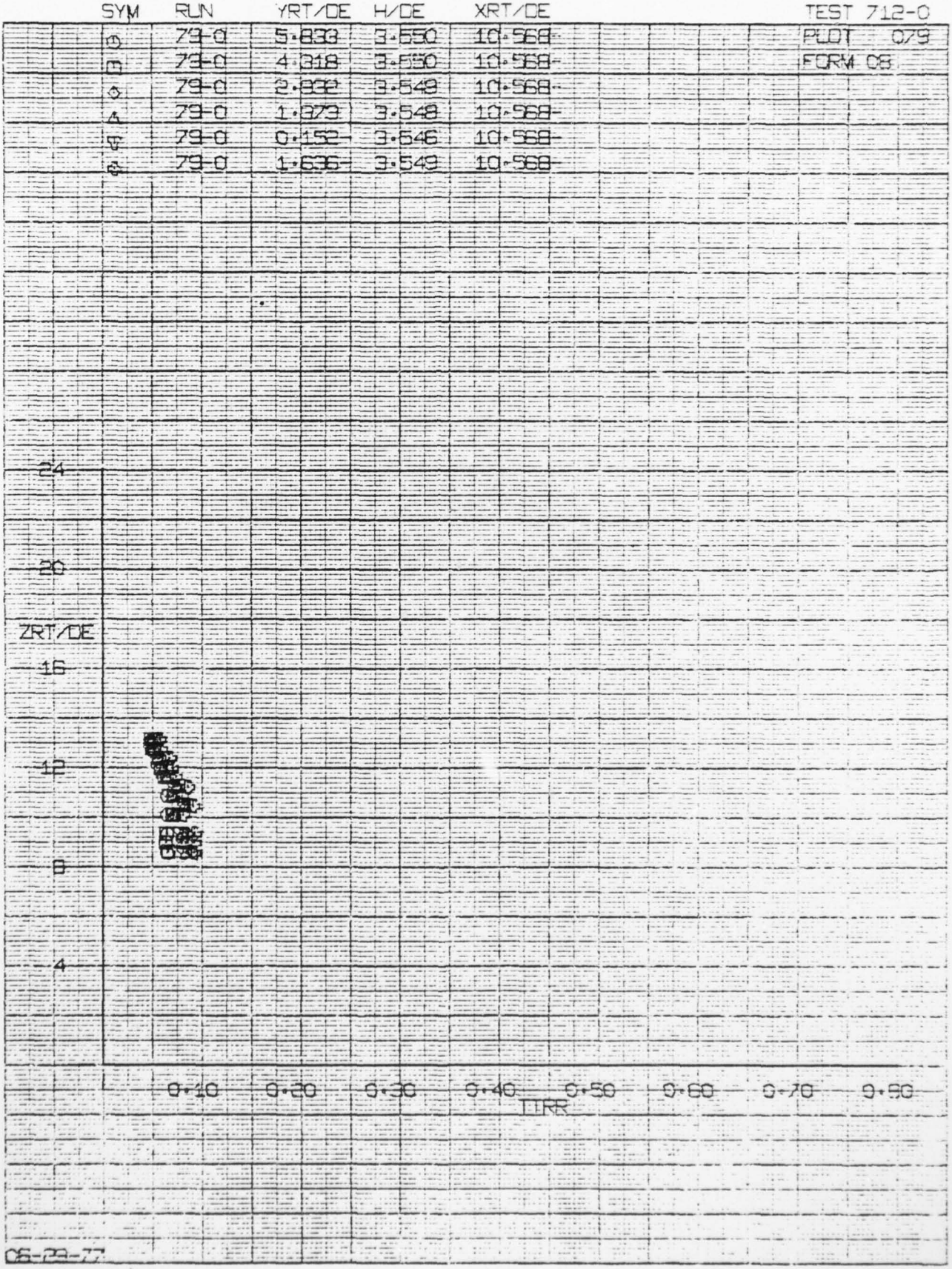



SYM RUN YR/DE H/DE XR/DE
78-0 1.561 2.572 10.568
78-0 0.023 2.564 10.568
78-0 1.508 2.564 10.568
78-0 3.152 2.565 10.568
78-0 4.523 2.565 10.568
78-0 6.015 2.565 10.568
TEST 712-0
PLOT 078
FORM 09
ZR/DE
24
20
16
12
8
30 20 10 0 10 20 30 40
THETAR
GAMMAR
06-29-77


SYM RUN YR/DE H/DE XR/DE
79-0 6.623 3.550 10.568
79-0 4.508 3.550 10.568
79-0 3.121 3.549 10.568
79-0 1.568 3.548 10.568
79-0 0.038 3.546 10.568
79-0 1.447 3.548 10.568
TEST 712-0
PLOT 079
FORM 07
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
QR
06-23-77

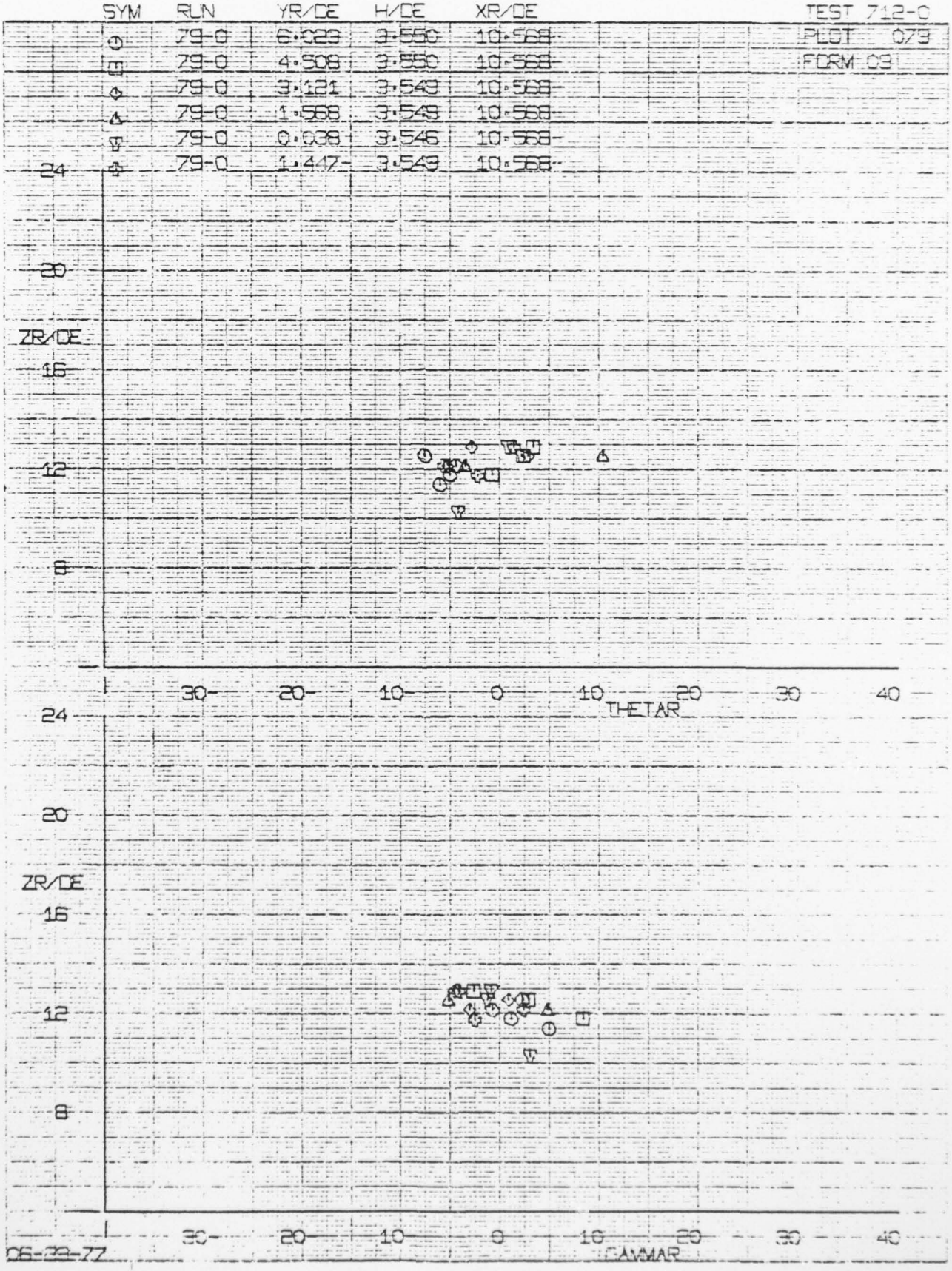
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	79-0	5.833	3.650	10.568-
□	73-0	4.318	3.650	10.568-
◇	79-0	2.832	3.649	10.568-
△	79-0	1.373	3.648	10.568-
▽	79-0	0.152-	3.646	10.568-
◁	79-0	1.636-	3.649	10.568-

TEST 712-0
PLOT 079
FORM 08

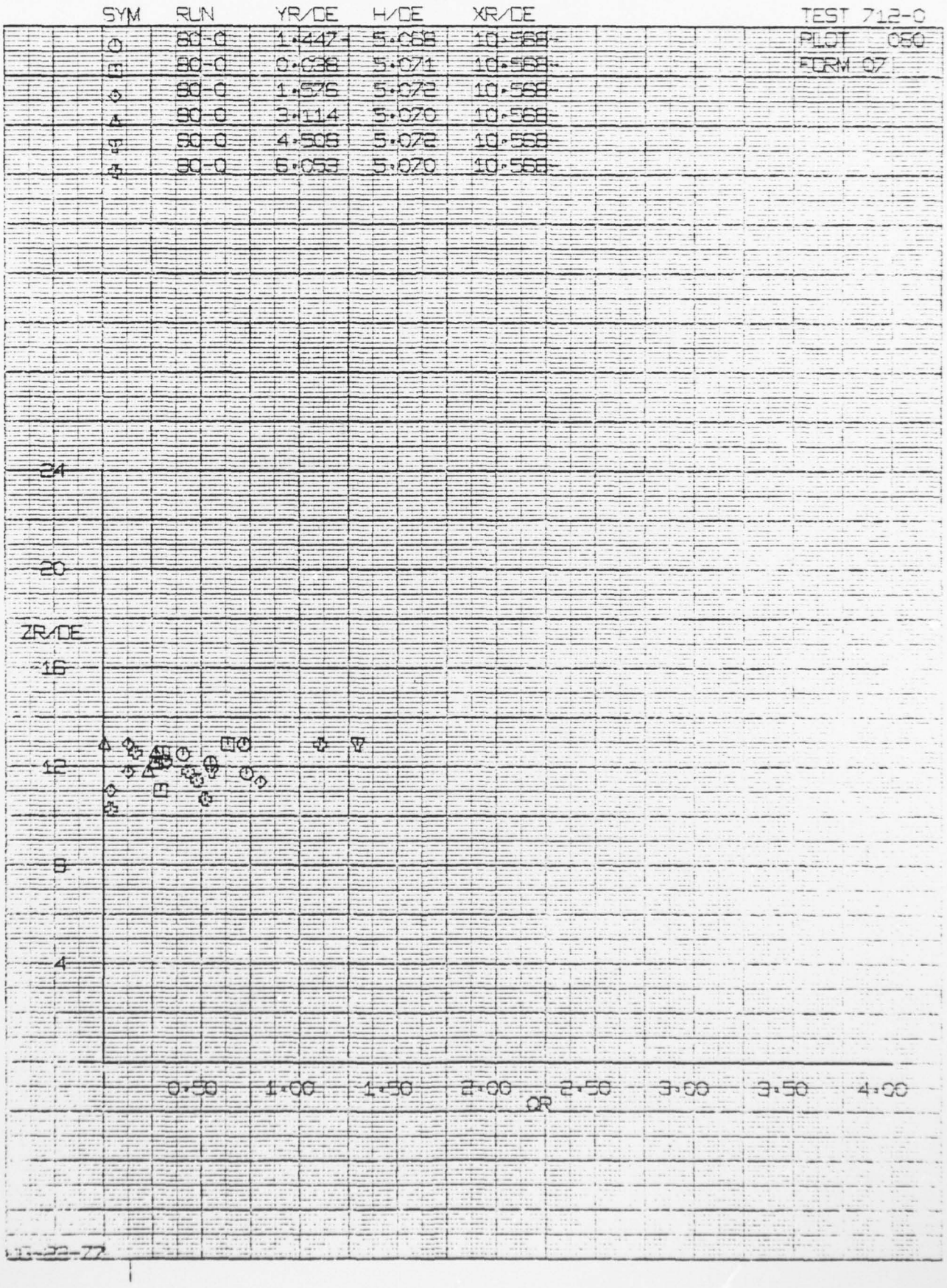


SYM	RUN	YR/DE	H/DE	XR/DE
○	79-0	6.023	3.550	10.568
□	79-0	4.508	3.550	10.568
◇	79-0	3.121	3.549	10.568
△	79-0	1.568	3.548	10.568
▽	79-0	0.038	3.546	10.568
⊕	79-0	1.447	3.549	10.568

TEST 712-0
PLOT 073
FORM 08

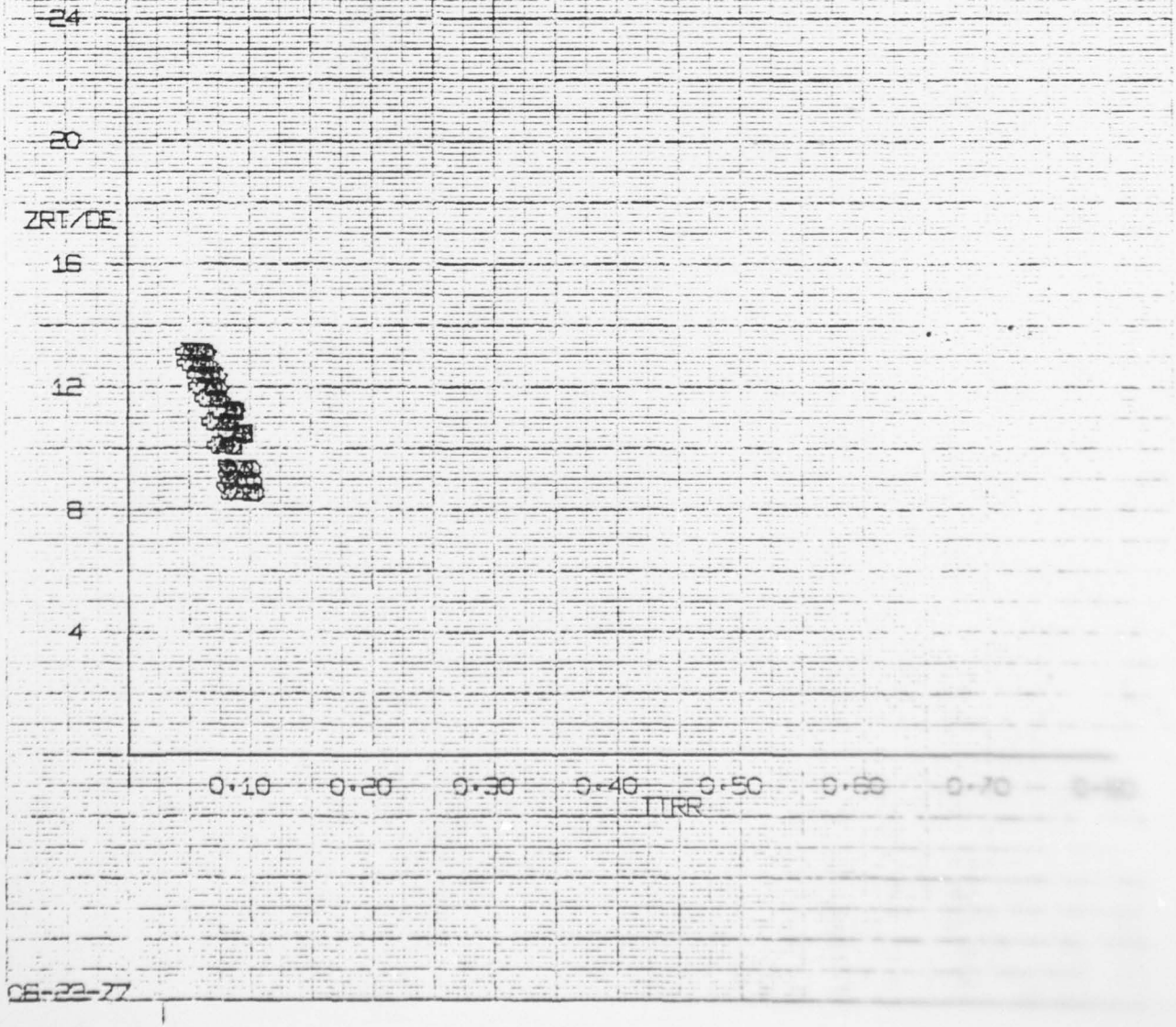


06-29-77


SYM RUN YR/DE H/DE XR/DE
80-0 1.447 5.068 10.568
80-0 0.638 5.071 10.568
80-0 1.576 5.072 10.568
80-0 3.114 5.070 10.568
80-0 4.306 5.072 10.568
80-0 6.053 5.070 10.568
TEST 712-0
PLOT 050
FORM 07
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
OR
11-22-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	80-0	1.636-	5.068	10.568-
□	80-0	0.152-	5.071	10.568-
◇	80-0	1.386	5.072	10.568-
△	80-0	2.324	5.070	10.568-
▽	80-0	4.318	5.072	10.568-
◁	80-0	5.864	5.070	10.568-

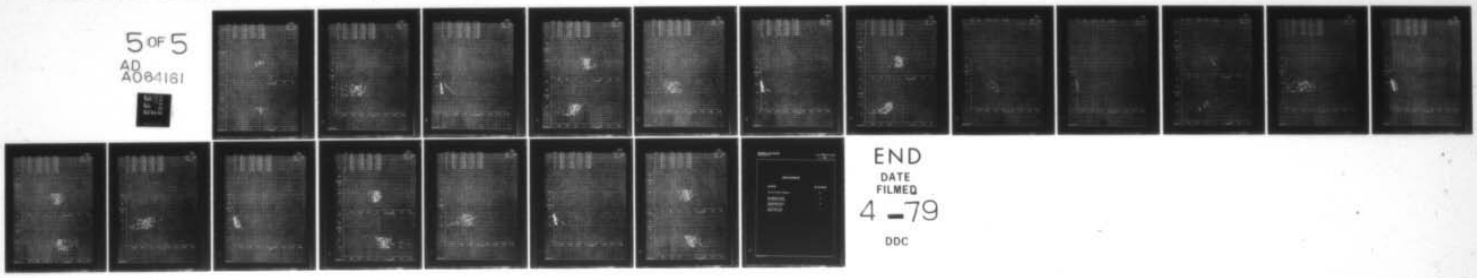
TEST 712-0
PLOT 030
FORM 08



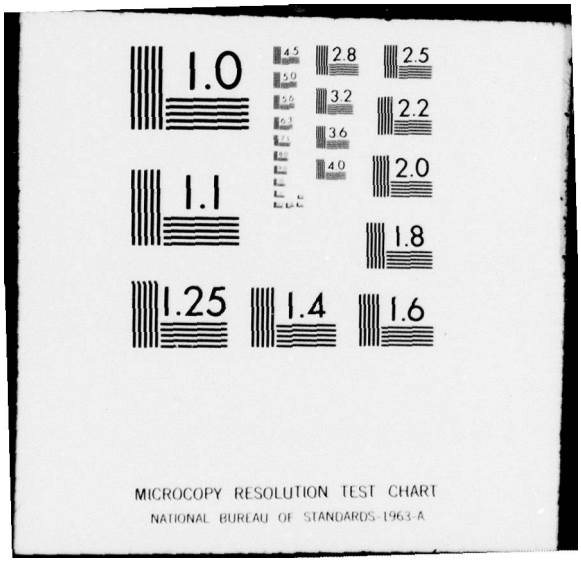
06-22-77

AD-A064 161 GENERAL DYNAMICS SAN DIEGO CA CONVAIR DIV F/G 1/3
LOW SPEED WIND TUNNEL TESTS TO EVALUATE THE AERODYNAMIC AND THE--ETC(U)
AUG 77 M B EILERT N00014-76-C-0698
UNCLASSIFIED CASD-GDLST-711 NL

5 OF 5
AD
A064161

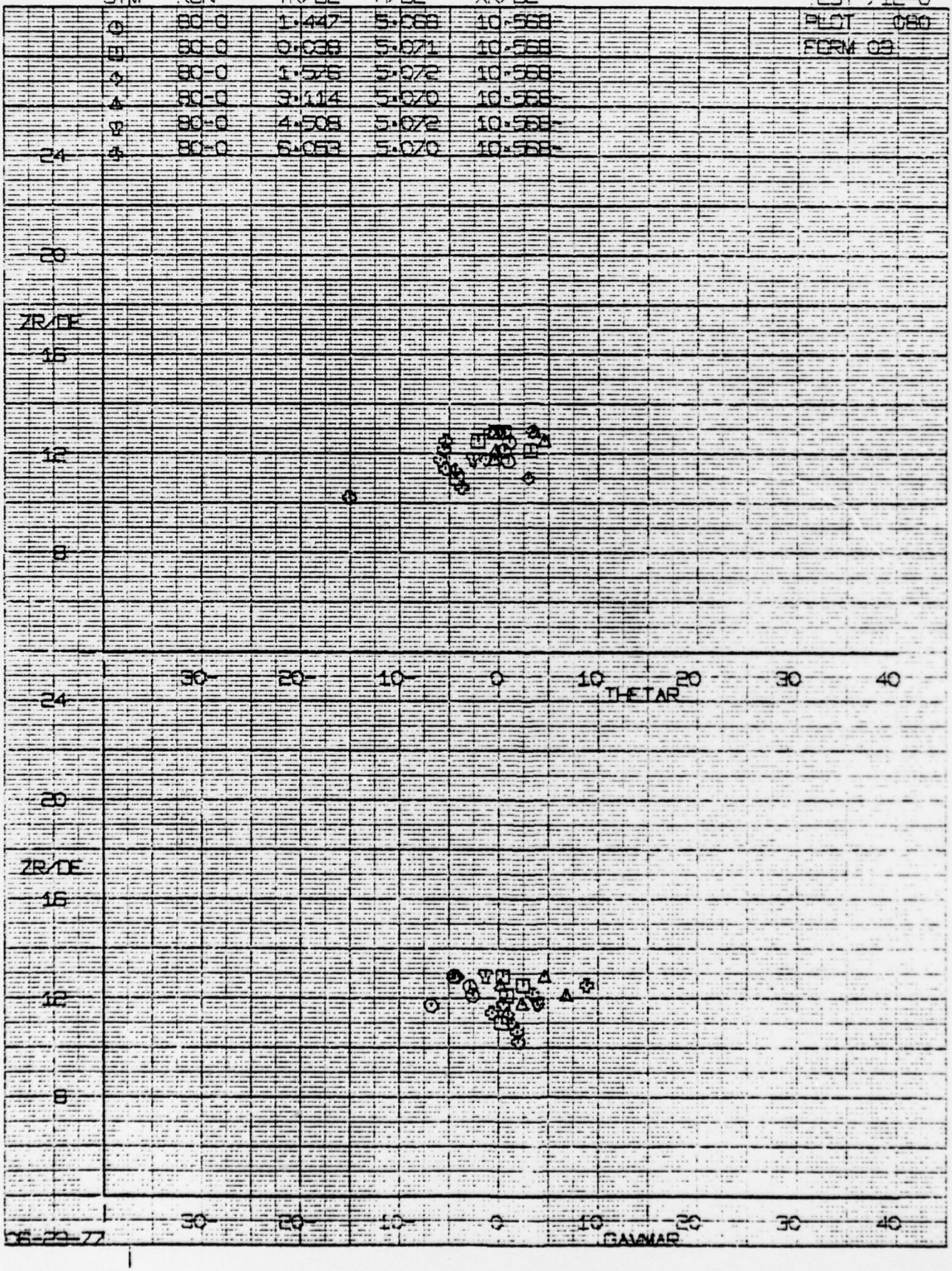


END
DATE
FILMED
4 -79
DDC


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

TEST 712-0
PLOT 080
FORM 03

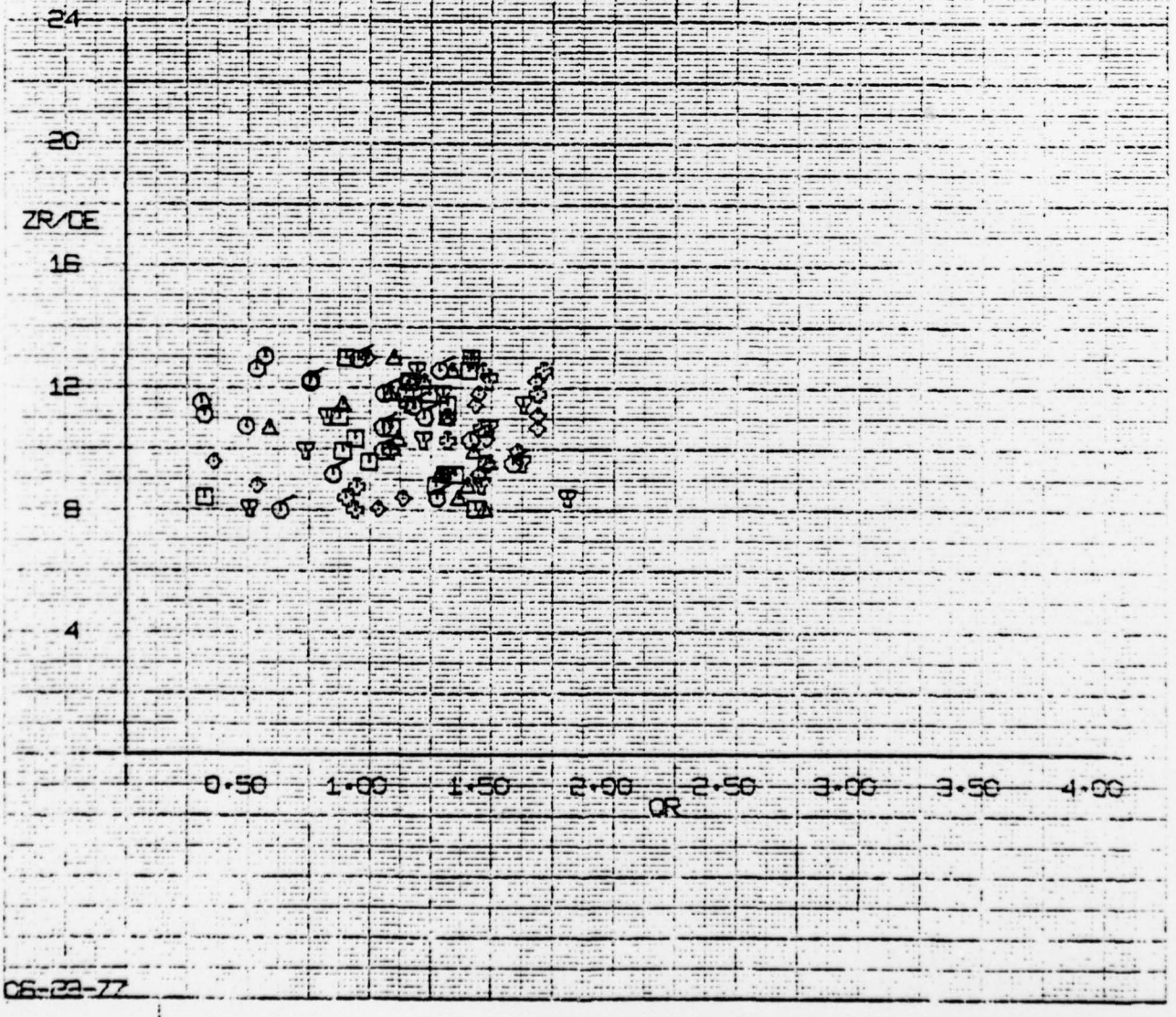
SYM	RUN	YR/DE	H/DE	XR/DE
⊙	80-0	1.447-	5.068	10.568-
⊡	80-0	0.038	5.071	10.568-
◇	80-0	1.576	5.072	10.568-
△	80-0	3.114	5.070	10.568-
▽	80-0	4.508	5.072	10.568-
✣	80-0	6.053	5.070	10.568-



06-29-77

SYM	RUN	YR/DE	H/DE	XR/DE
○	81-0	11.992	2.565	14.356
□	81-0	4.456	2.565	14.356
◇	81-0	2.870	2.565	14.356
△	81-0	1.530	2.565	14.356
▽	81-0	0.083	2.564	14.356
⊙	81-0	1.606	2.564	14.356
⊕	81-0	3.061	2.565	14.356

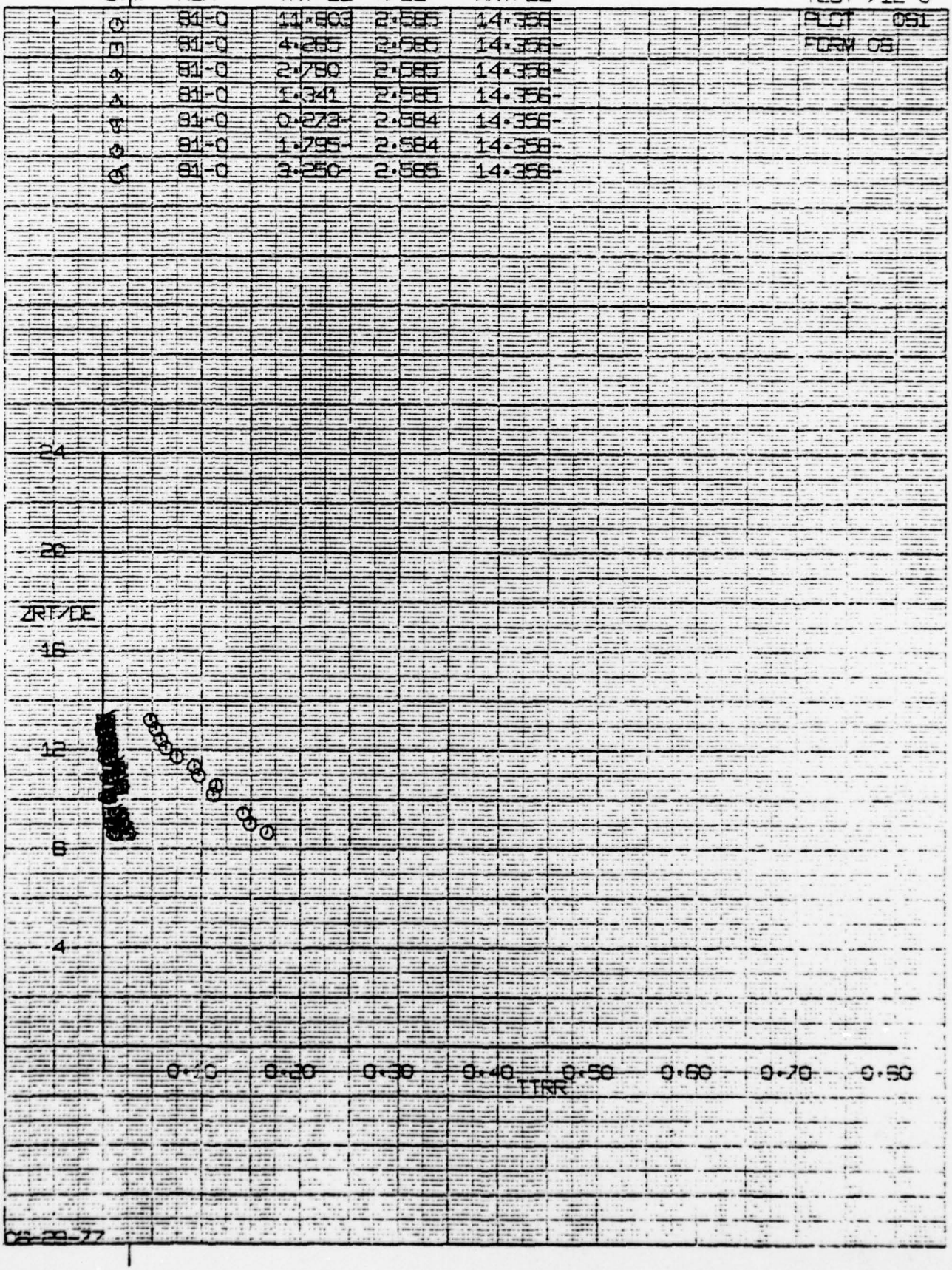
TEST 712-0
PLOT 081
FORM 07



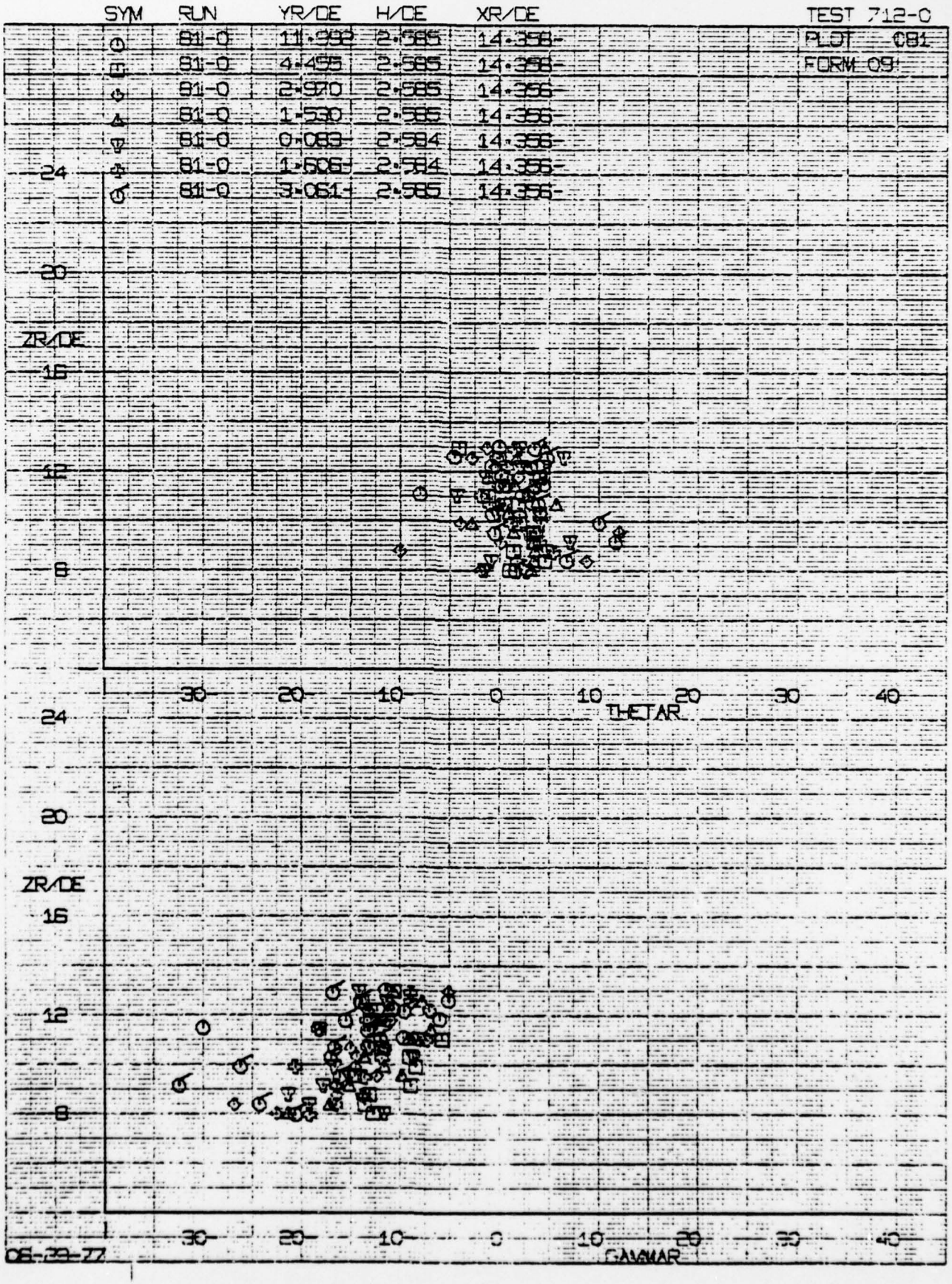
06-23-77

SYM	RUN	YRT/DE	H/DE	XRT/DE
○	81-0	11.803	2.585	14.356-
□	81-0	4.265	2.585	14.356-
◇	81-0	2.780	2.585	14.356-
△	81-0	1.341	2.585	14.356-
▽	81-0	0.273-	2.584	14.356-
◁	81-0	1.795-	2.584	14.356-
▷	81-0	3.250-	2.585	14.356-

TEST 712-0
PLOT 061
FORM 05

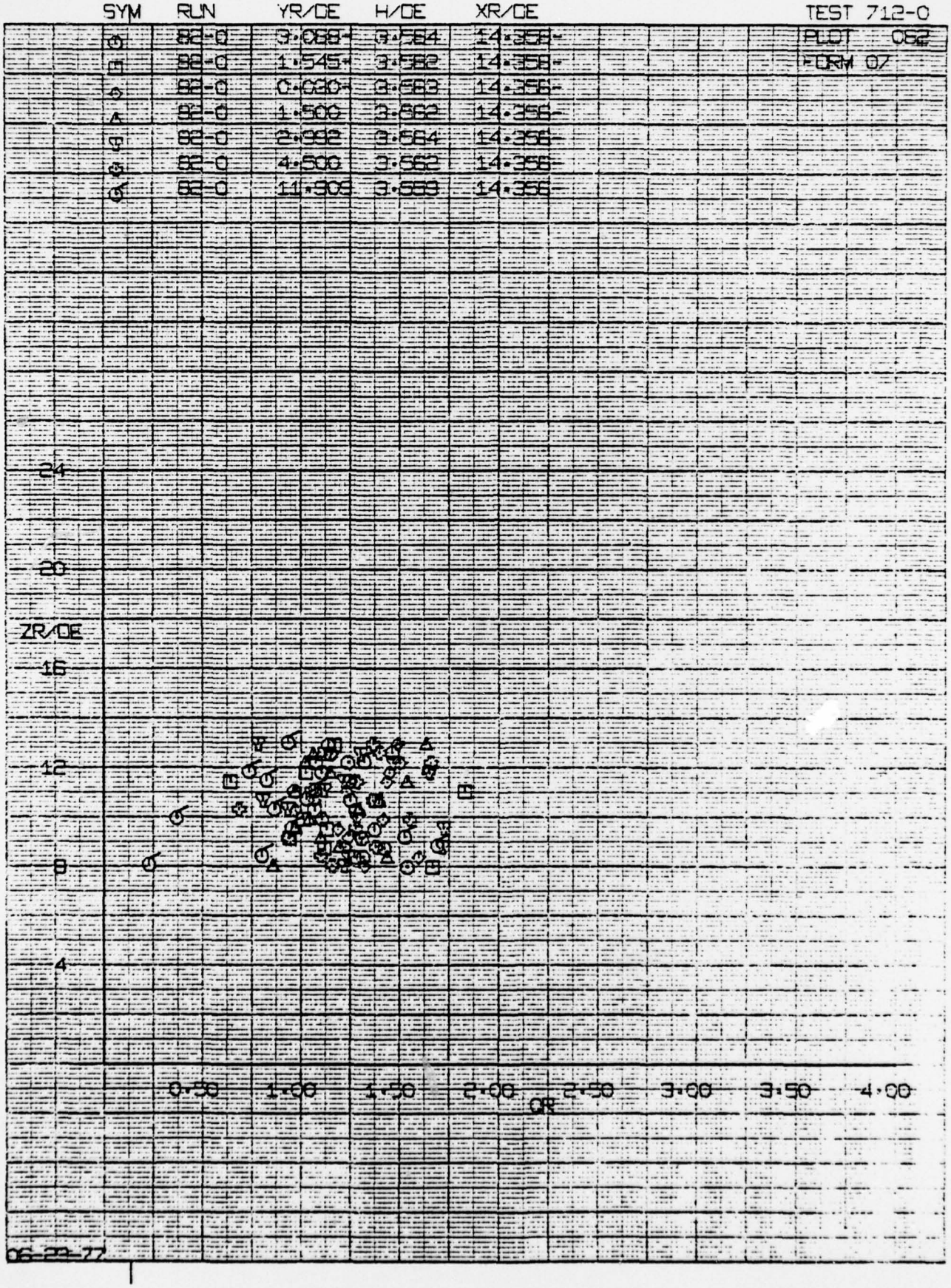


08-20-77


SYM RUN YR/DE H/DE XR/DE
81-0 11.992 2.585 14.356-
81-0 4.455 2.585 14.356-
81-0 2.970 2.585 14.356-
81-0 1.530 2.585 14.356-
81-0 0.089- 2.584 14.356-
81-0 1.606- 2.584 14.356-
81-0 3.061- 2.585 14.356-
TEST 712-0
PLOT C81
FORM 09
ZR/DE
THETAR
GAMMAR
08-29-77

SYM	RUN	YR/DE	H/DE	XR/DE
○	82-0	3.068-	3.564	14.358-
□	82-0	1.545-	3.562	14.358-
◇	82-0	0.030-	3.563	14.356-
△	82-0	1.500	3.562	14.356-
⊕	82-0	2.992	3.564	14.356-
⊠	82-0	4.500	3.562	14.356-
⊗	82-0	11.909	3.563	14.356-

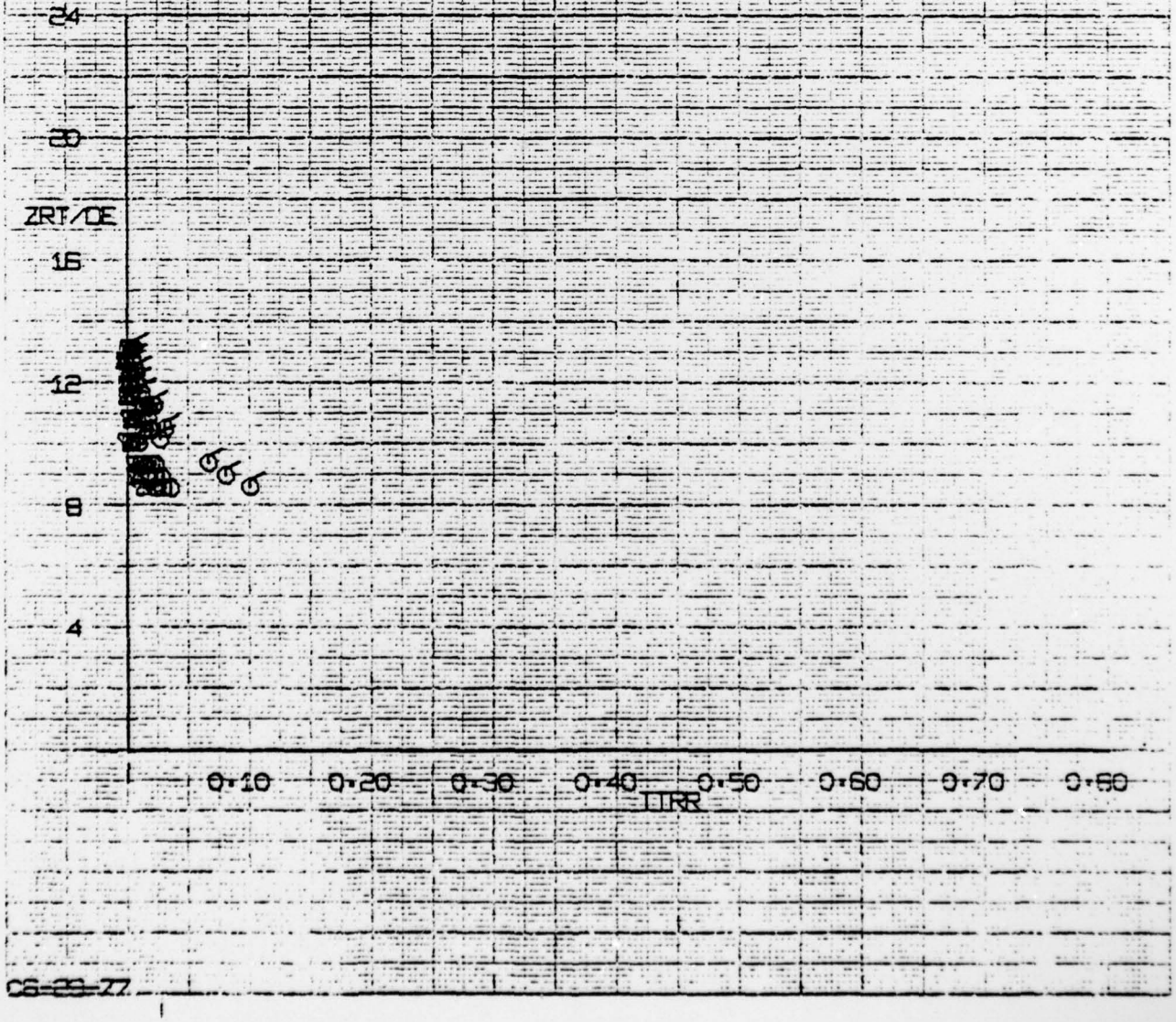
TEST 712-0
PLOT 062
FORM 07



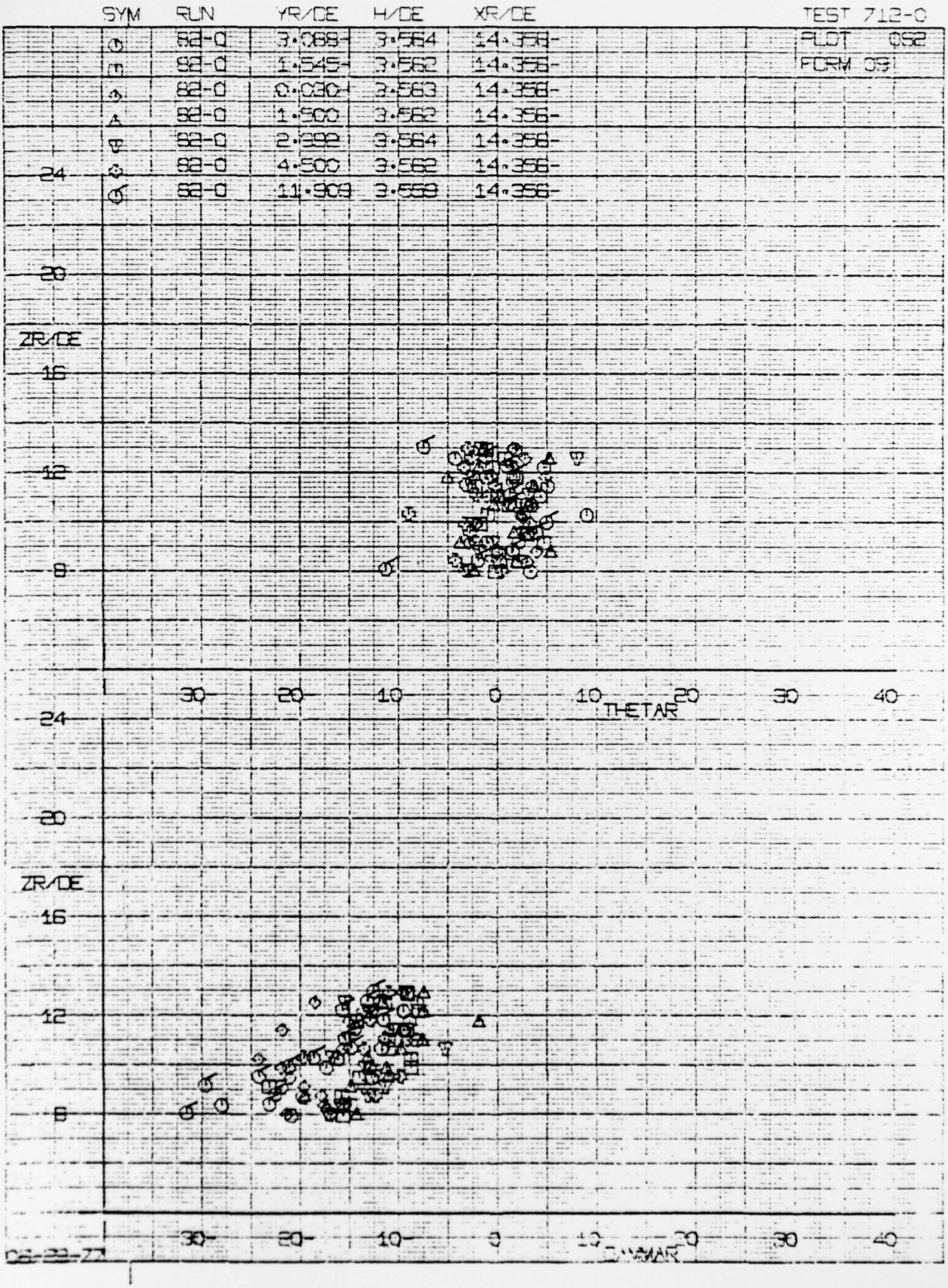
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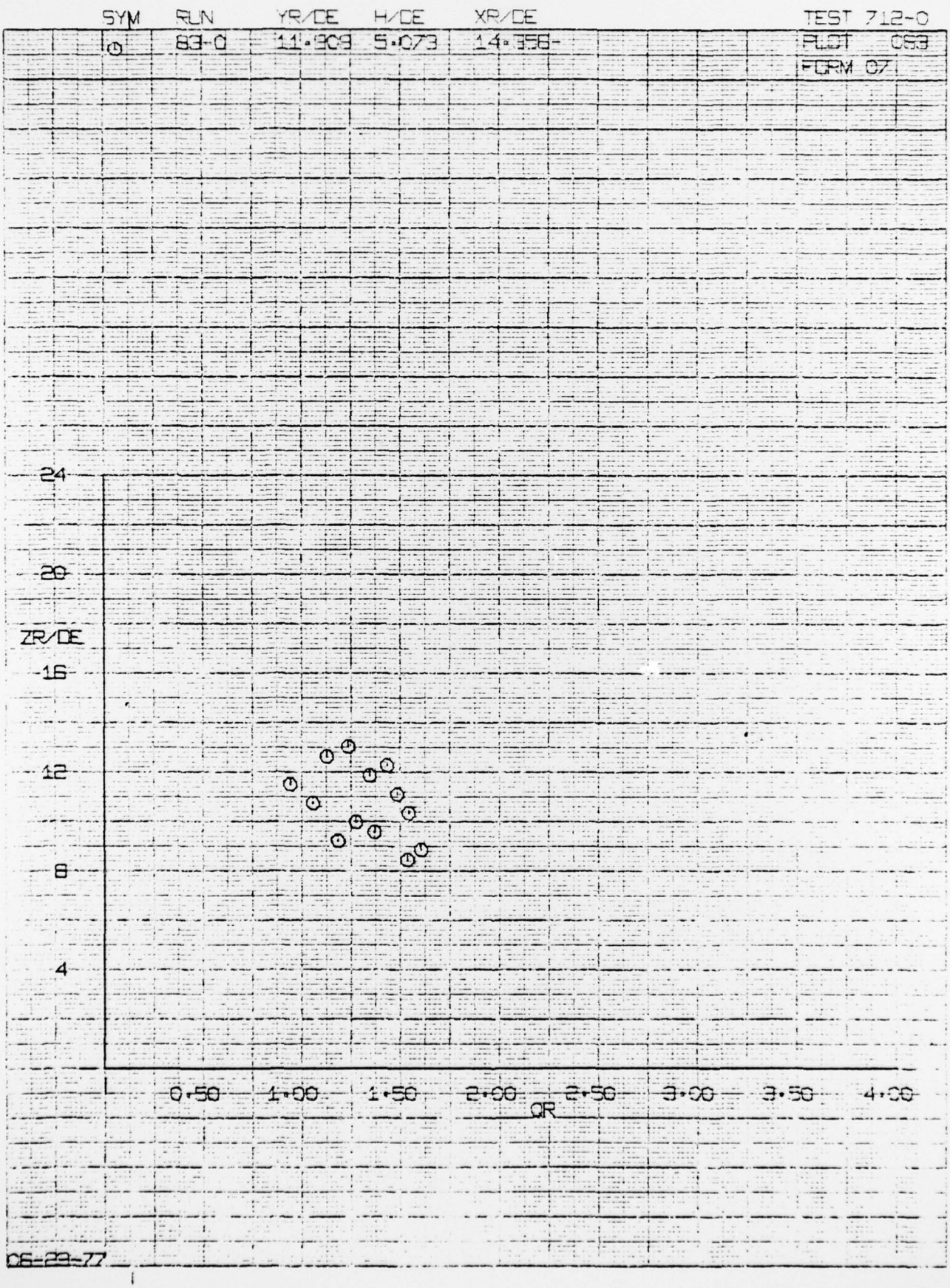
SYM	RUN	YRT/DE	H/DE	XRT/DE
○	82-0	3.258	3.564	14.356
□	82-0	1.735	3.562	14.356
◇	82-0	0.220	3.563	14.356
△	82-0	1.311	3.562	14.356
▽	82-0	2.803	3.564	14.356
⊲	82-0	4.311	3.562	14.356
⊳	82-0	11.720	3.559	14.356

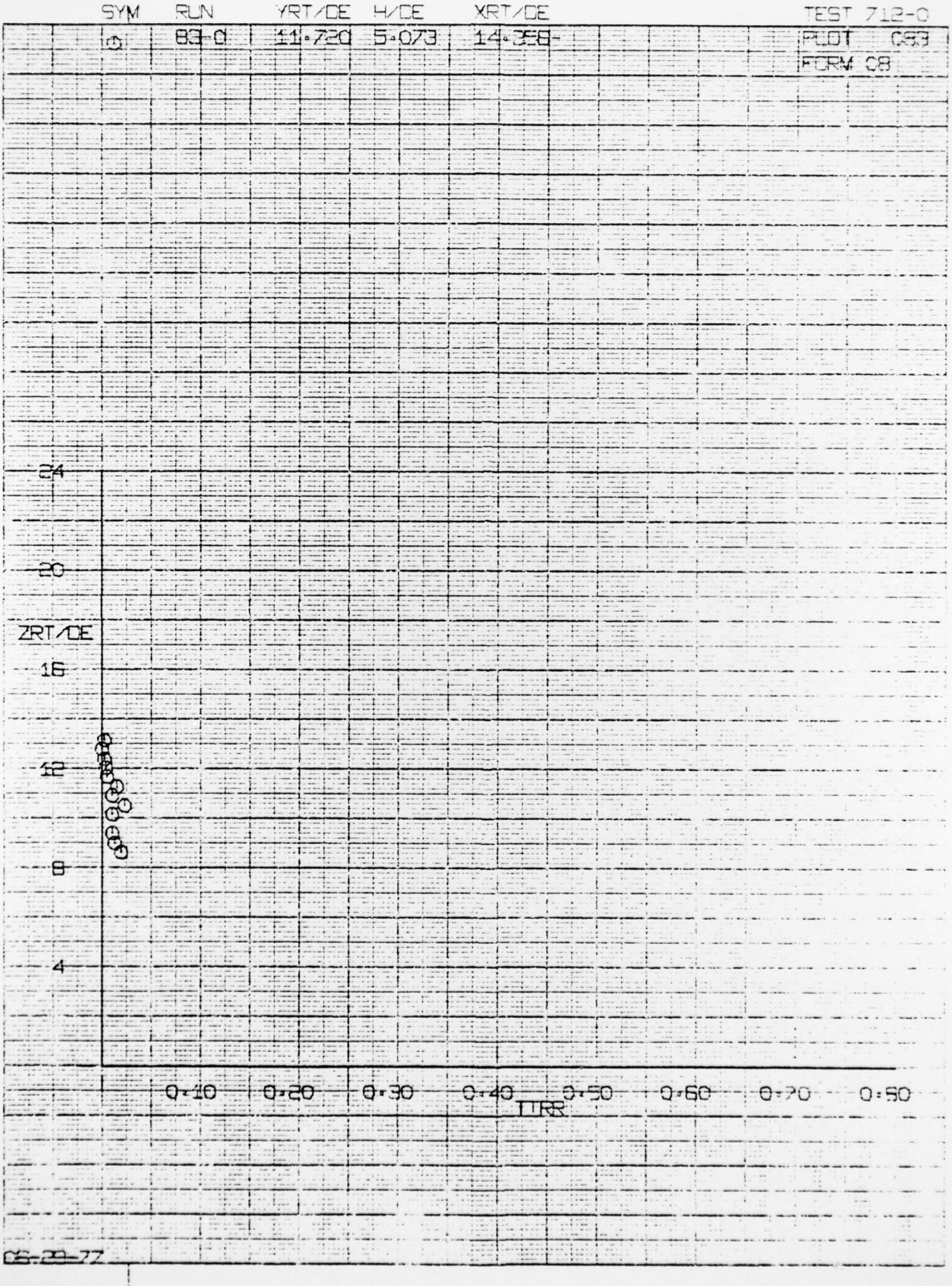
TEST 712-0
PLOT 052
FORM 08

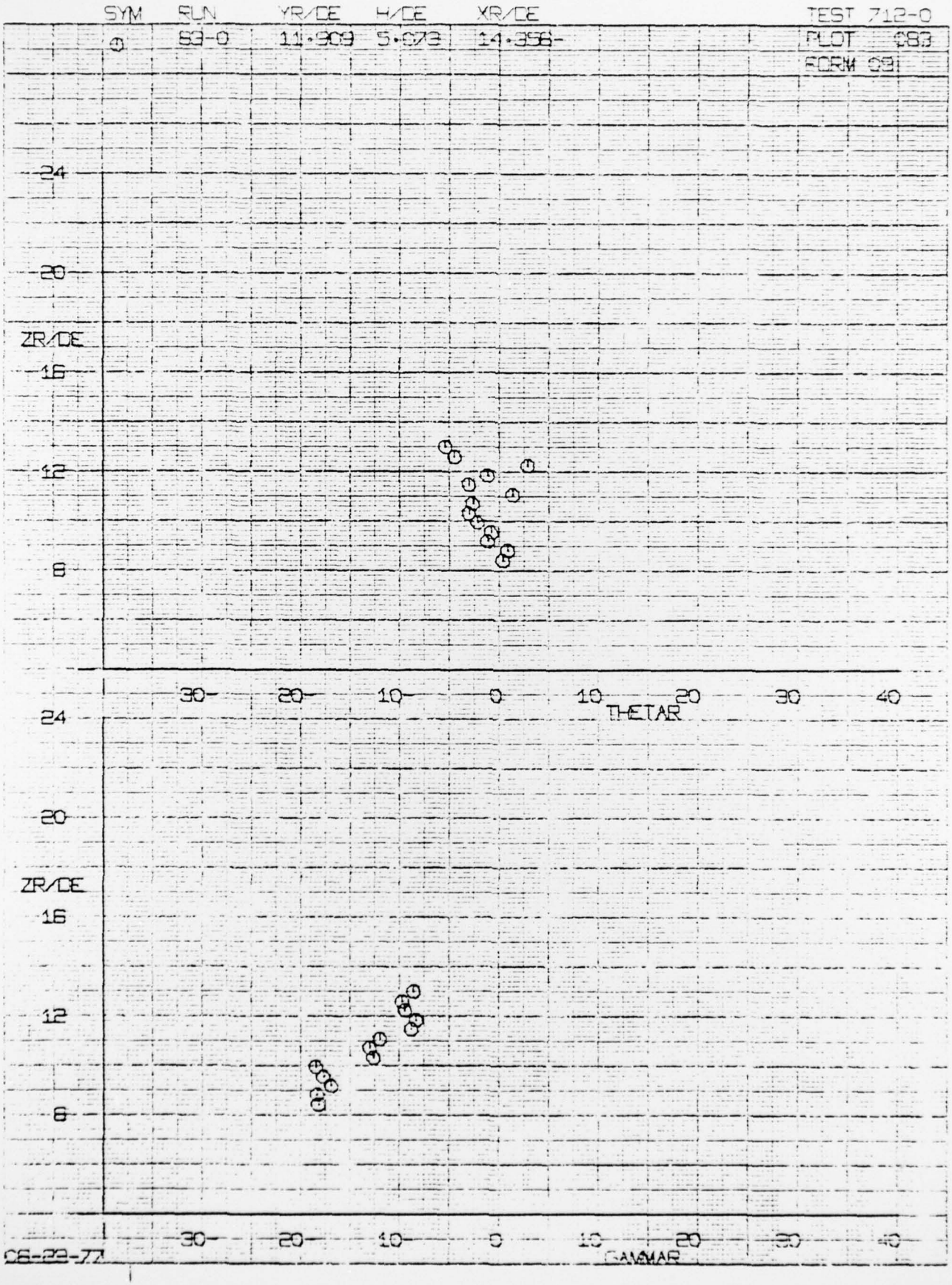


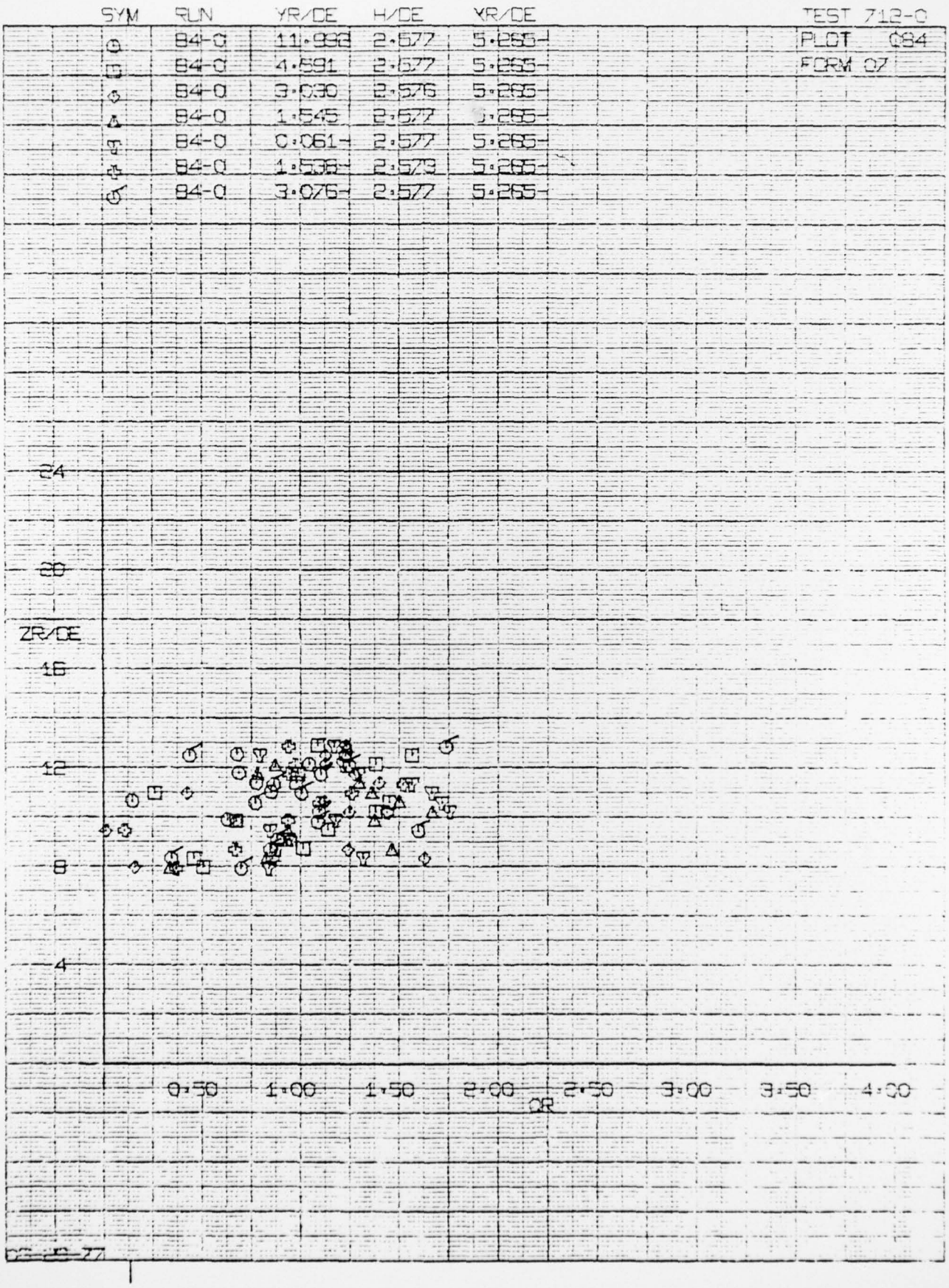
06-29-77

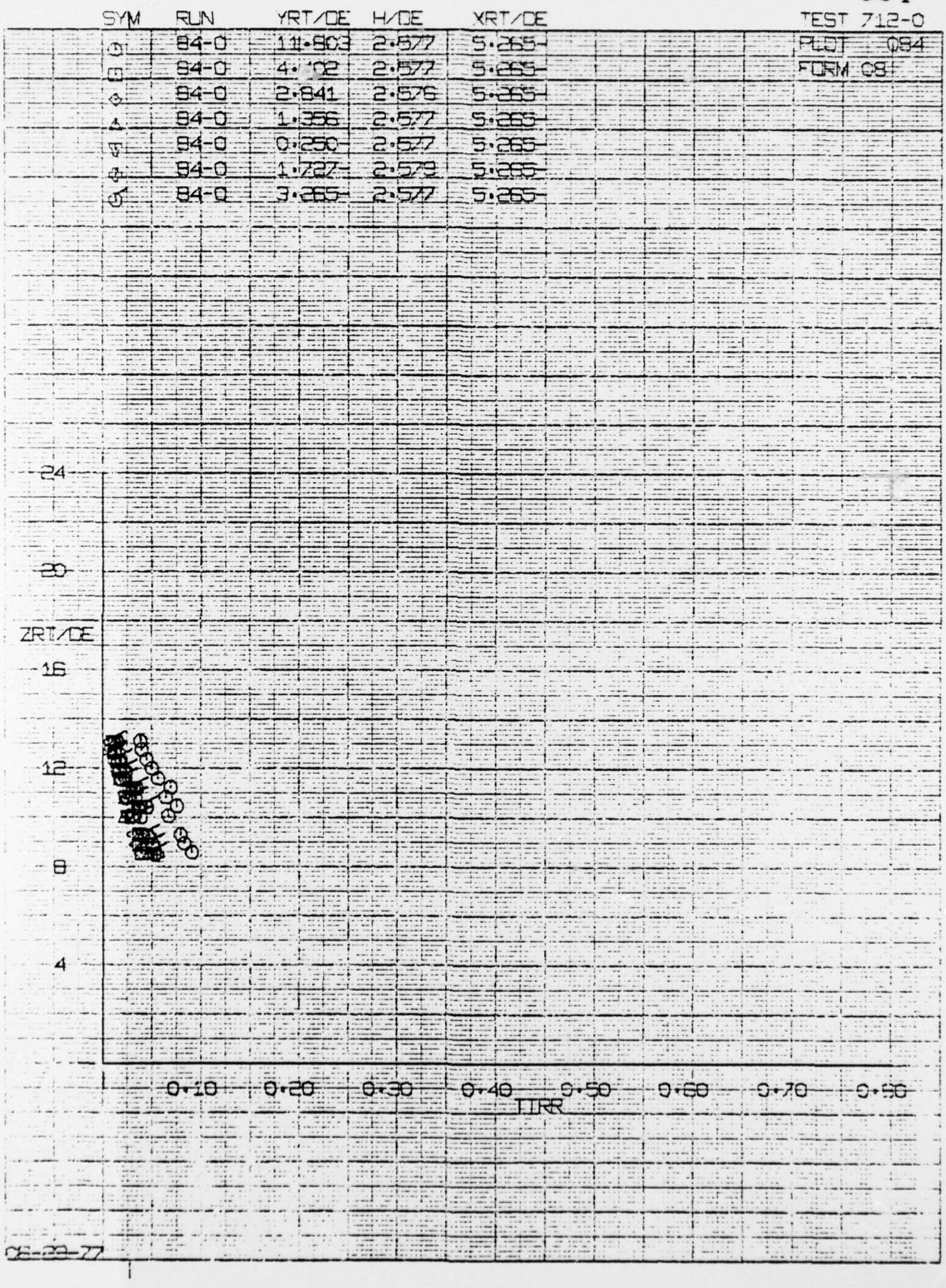

SYM RUN YR/DE H/DE XR/DE
82-0 3.088- 3.564 14.356-
82-0 1.545- 3.562 14.356-
82-0 0.030- 3.563 14.356-
82-0 1.500 3.562 14.356-
82-0 2.992 3.564 14.356-
82-0 4.500 3.562 14.356-
82-0 11.909 3.559 14.356-
TEST 712-0
PLOT 052
FORM 03
ZR/DE
24
20
16
12
8
30 20 10 0 10 20 30 40
THETAR
ZR/DE
24
20
16
12
8
30 20 10 0 10 20 30 40
THETAR
06-22-77

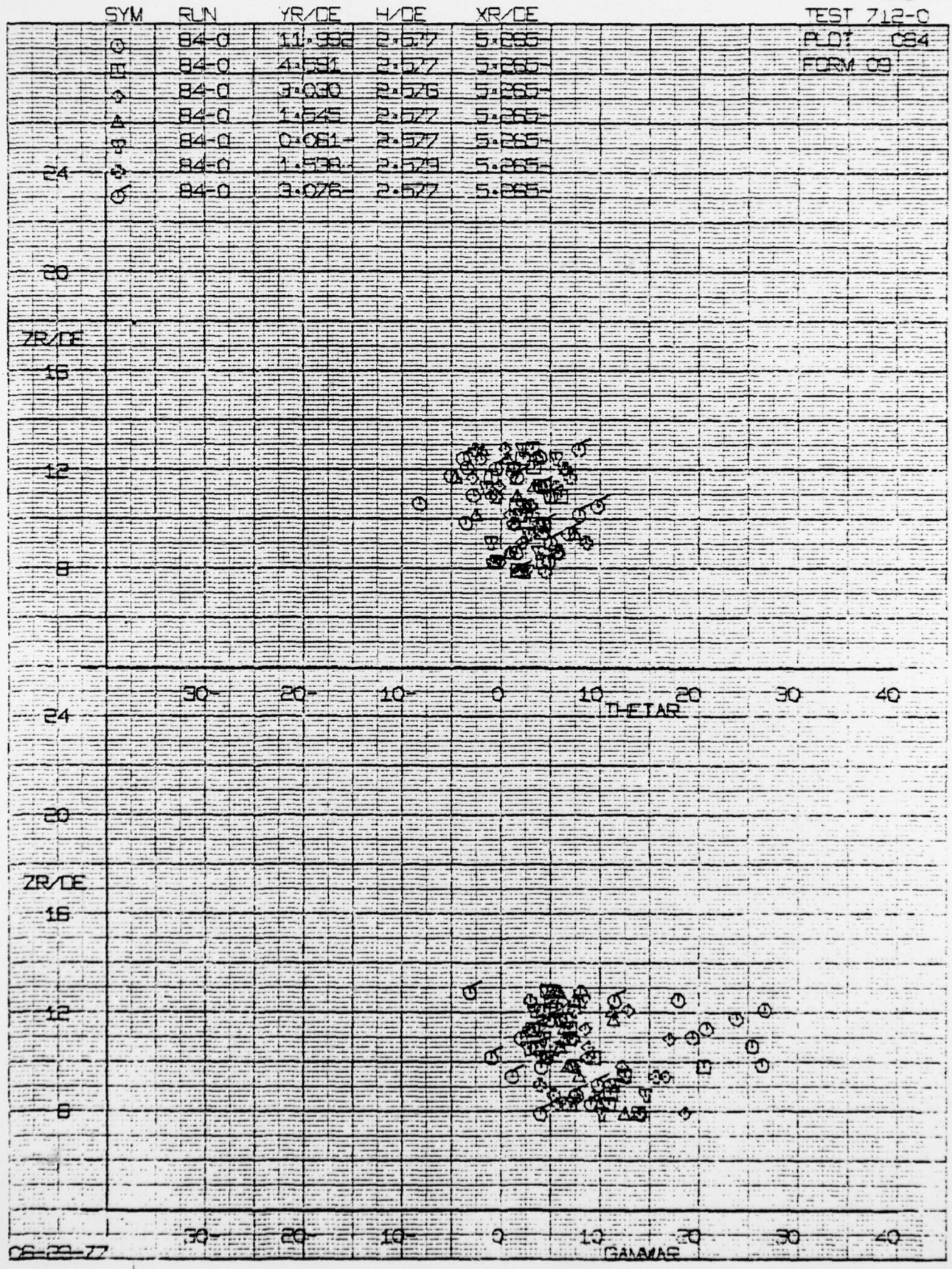

SYM RUN YR/DE H/DE XR/DE TEST 712-0
83-0 11.309 5.073 14.356- PLOT 083
FORM 07
24
20
ZR/DE
16
12
8
4
0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00
QR
06-23-77


SYM
RUN
YRT/DE
H/DE
XRT/DE
TEST 712-0
83-0
11.720
5.073
14.358
PLOT C83
FORM 08
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TURB
05-29-77


SYM
RUN
YR/DE
H/DE
XR/DE
TEST 712-0
53-0
11.909
5.073
14.356-
PLOT 083
FORM 03
24
20
ZR/DE
16
12
8
30-
20-
10-
0
10
20
30
40
THETAR
24
20
ZR/DE
16
12
8
30-
20-
10-
0
10
20
30
40
GAMMAR
06-22-77

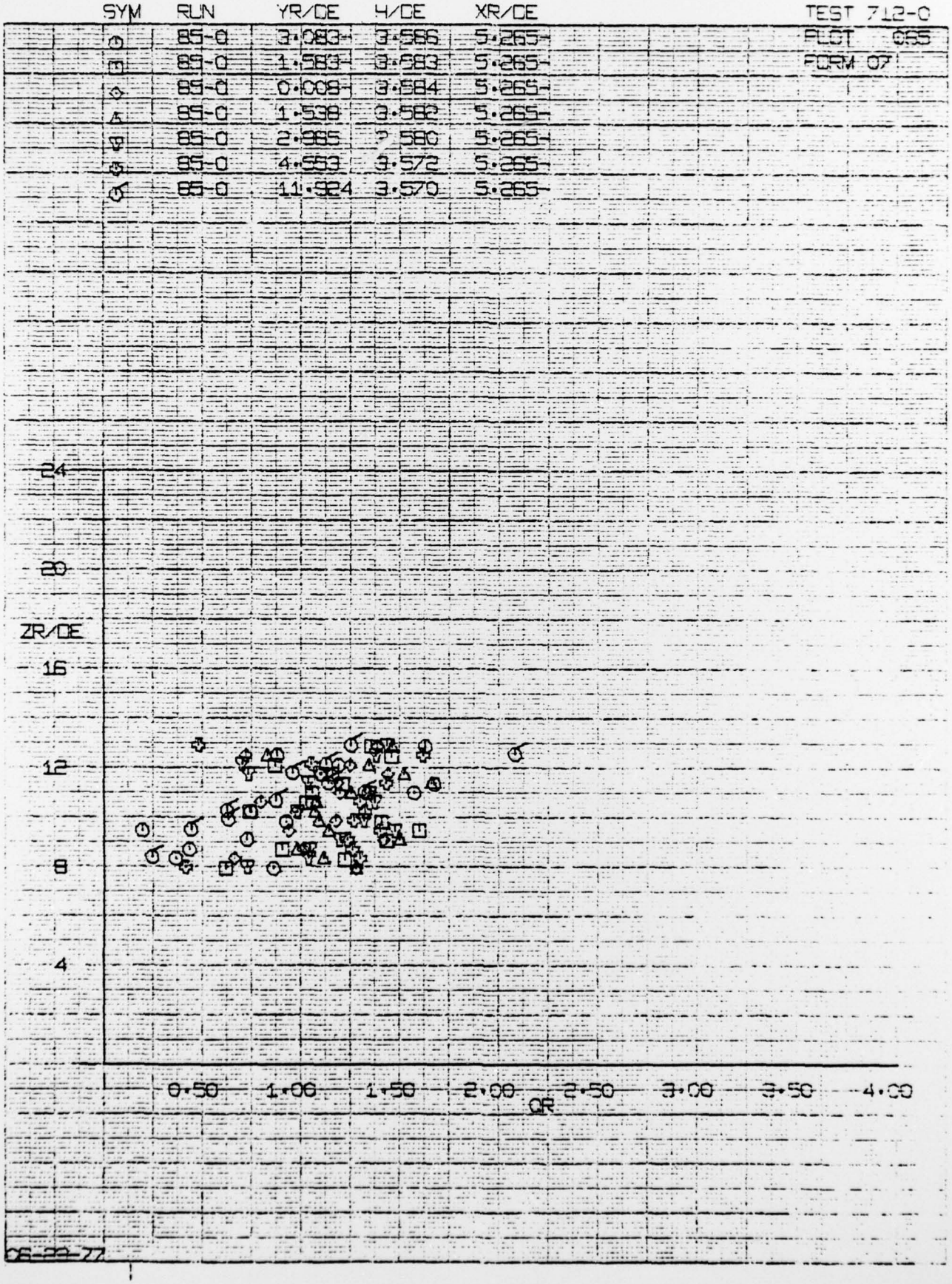

SYM RUN YR/DE H/DE XR/DE
TEST 712-0
PLOT 084
FORM 07
84-0 11.988 2.577 5.265
84-0 4.591 2.577 5.265
84-0 3.030 2.576 5.265
84-0 1.545 2.577 5.265
84-0 0.061 2.577 5.265
84-0 1.536 2.573 5.265
84-0 3.076 2.577 5.265
24
20
ZR/DE
16
12
8
4
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
XR


SYM RUN YRT/DE H/DE XRT/DE
84-0 11.803 2.577 5.265
84-0 4.102 2.577 5.265
84-0 2.841 2.576 5.265
84-0 1.356 2.577 5.265
84-0 0.250 2.577 5.265
84-0 1.727 2.579 5.265
84-0 3.265 2.577 5.265
TEST 712-0
PLOT 084
FORM 08
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TIRR


SYM RUN YR/DE H/DE XR/DE
84-0 11.382 2.577 5.265-
84-0 4.531 2.577 5.265-
84-0 3.030 2.576 5.265-
84-0 1.645 2.577 5.265-
84-0 0.061- 2.577 5.265-
84-0 1.538- 2.578 5.265-
84-0 3.026- 2.577 5.265-
TEST 712-0
PLOT C84
FORM 09
ZR/DE
24
20
16
12
8
30- 20- 10- 0 10 20 30 40
THETAR
GAMMAS
06-29-77

SYM	RUN	YR/DE	H/DE	XR/DE
○	85-0	3.083-	3.586	5.265-
□	85-0	1.583-	3.583	5.265-
◇	85-0	0.008-	3.584	5.265-
△	85-0	1.538	3.582	5.265-
▽	85-0	2.985	3.580	5.265-
☆	85-0	4.553	3.572	5.265-
◁	85-0	11.924	3.570	5.265-

TEST 712-0
PLOT 065
FORM 07

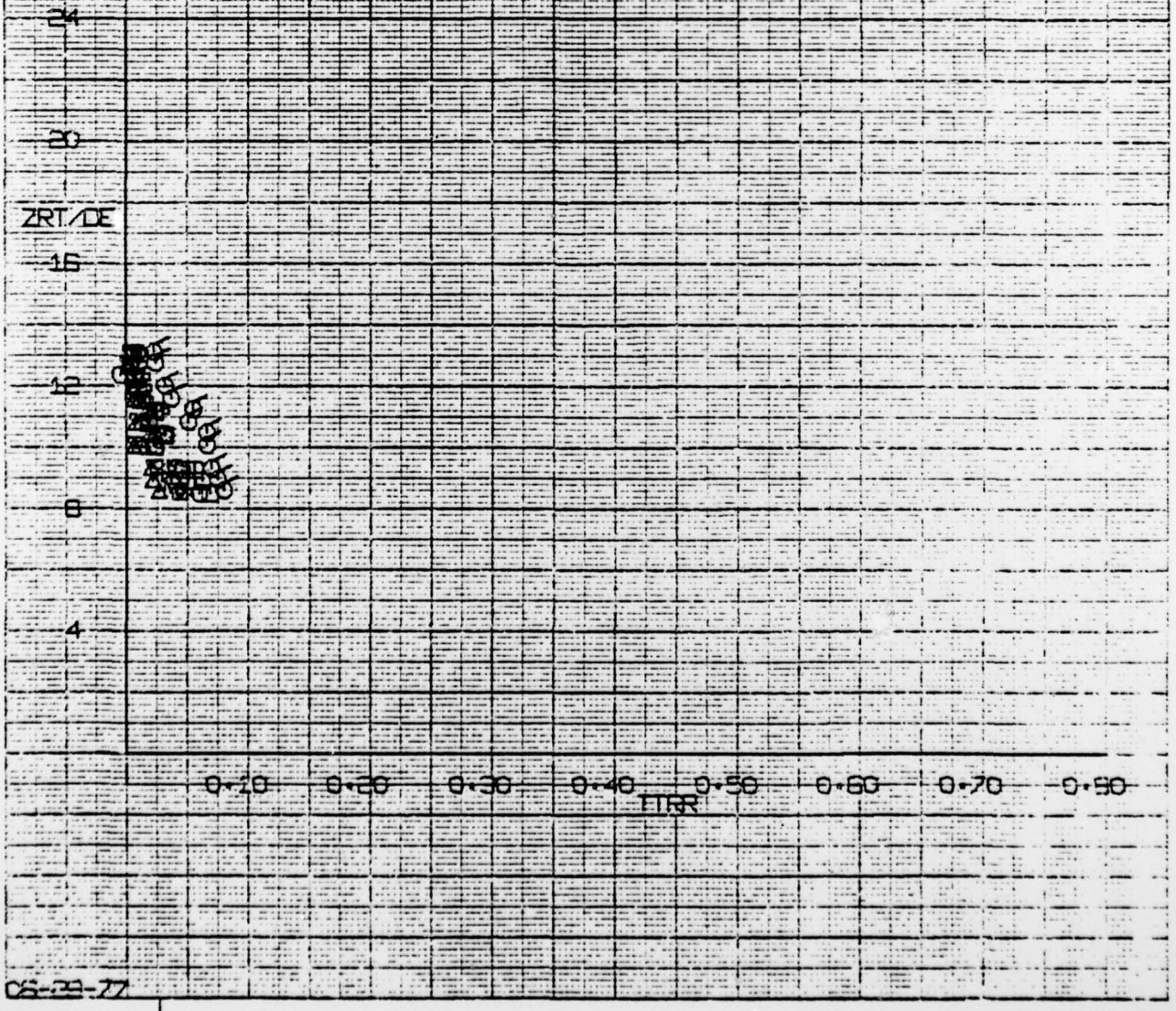


TEST 712-0

PLOT 085

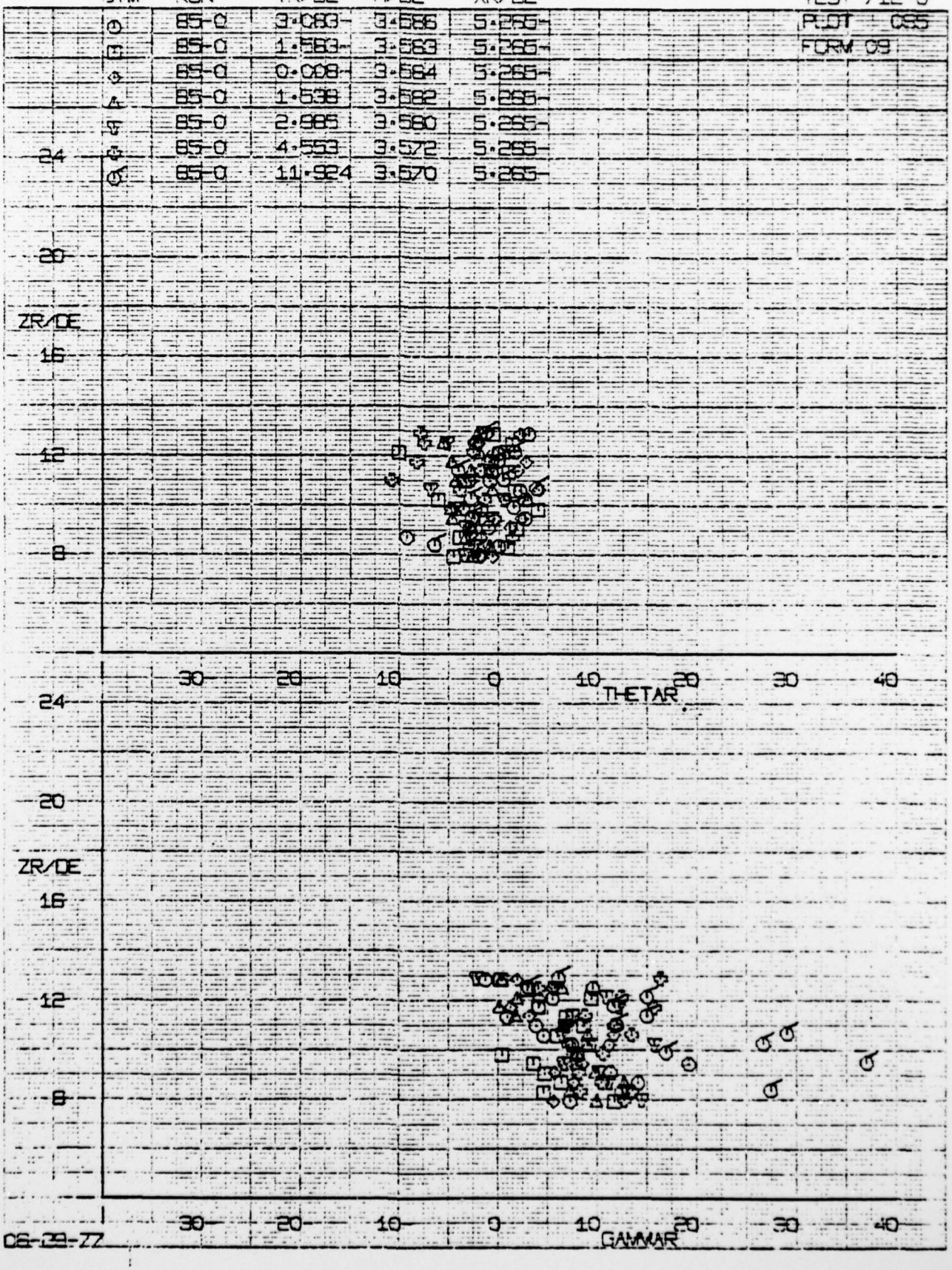
FORM 08

SYM	RUN	YRT/DE	H/DE	XRT/DE
B	85-0	3.273-	3.586	5.265-
C	85-0	1.773-	3.583	5.265-
D	85-0	0.197-	3.584	5.265-
A	85-0	1.348	3.582	5.265-
E	85-0	2.795	3.580	5.265-
F	85-0	4.364	3.572	5.265-
G	85-0	11.735	3.570	5.265-



TEST 712-0
PLOT 085
FORM 09

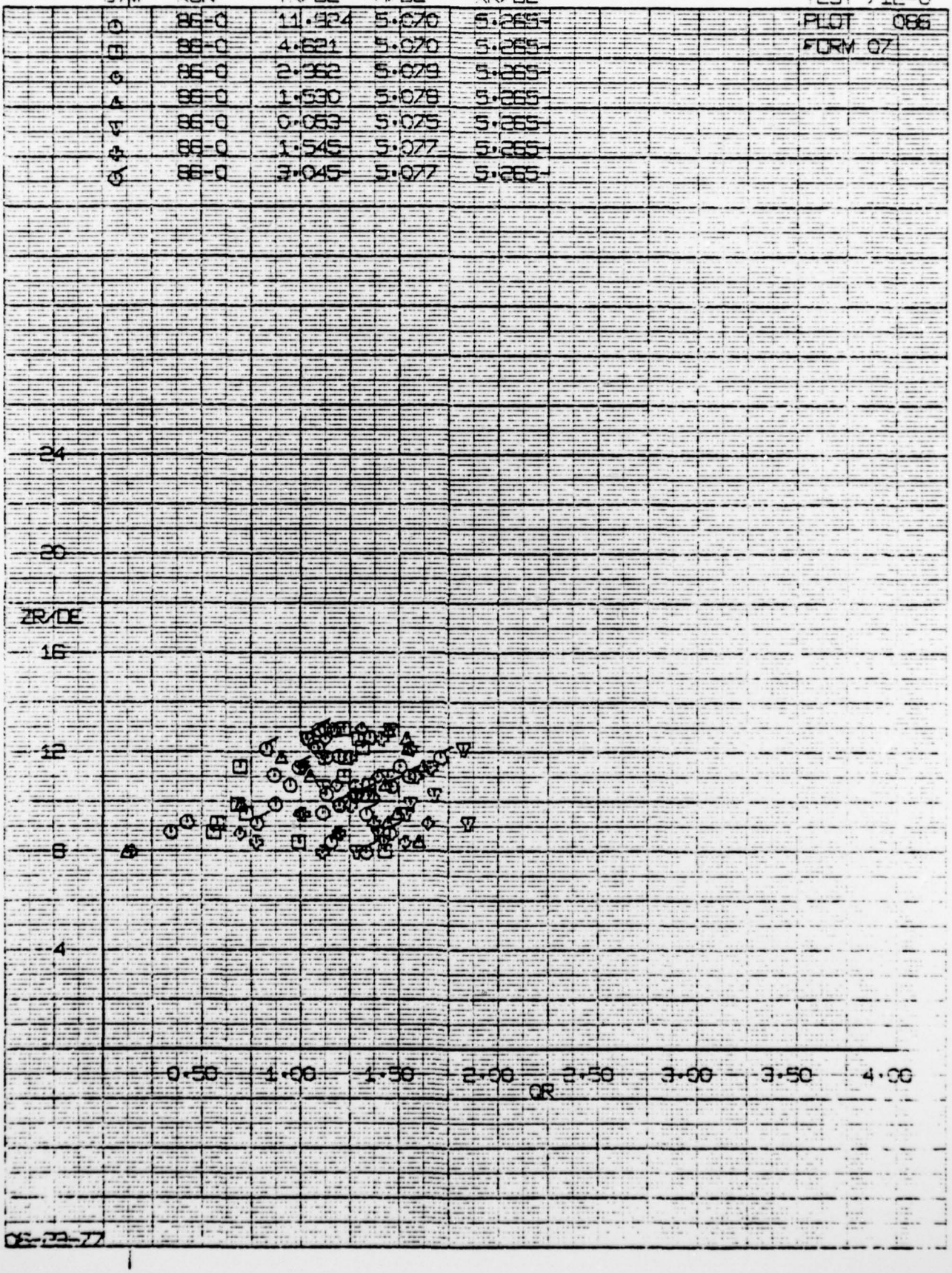
SYM	RUN	YR/DE	H/DE	XR/DE
⊙	85-0	3.083-	3.586	5.265-
□	85-0	1.583-	3.583	5.265-
◇	85-0	0.008-	3.664	5.265-
△	85-0	1.538	3.582	5.265-
▽	85-0	2.985	3.580	5.265-
⊕	85-0	4.553	3.572	5.265-
⊗	85-0	11.924	3.570	5.265-



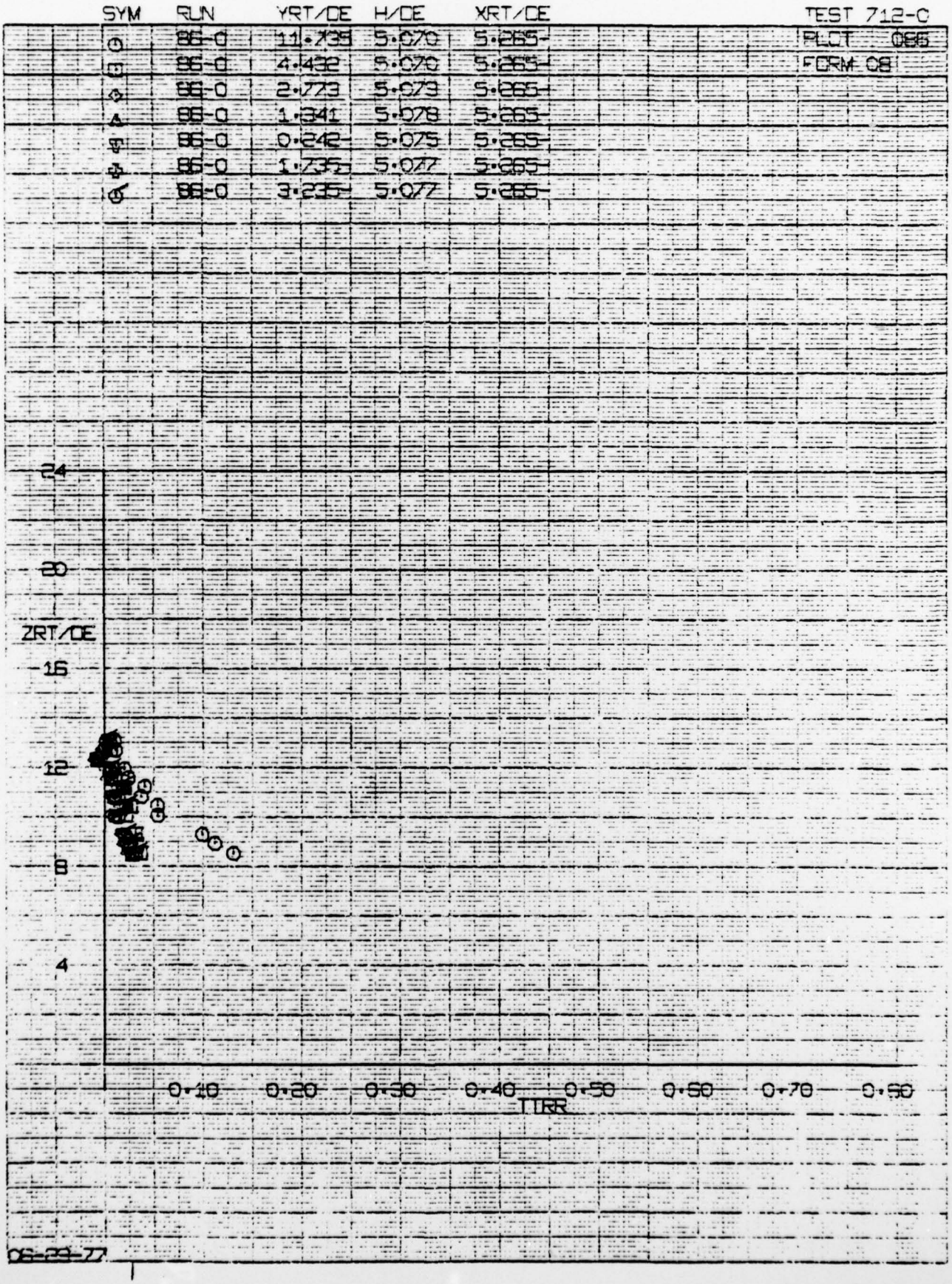
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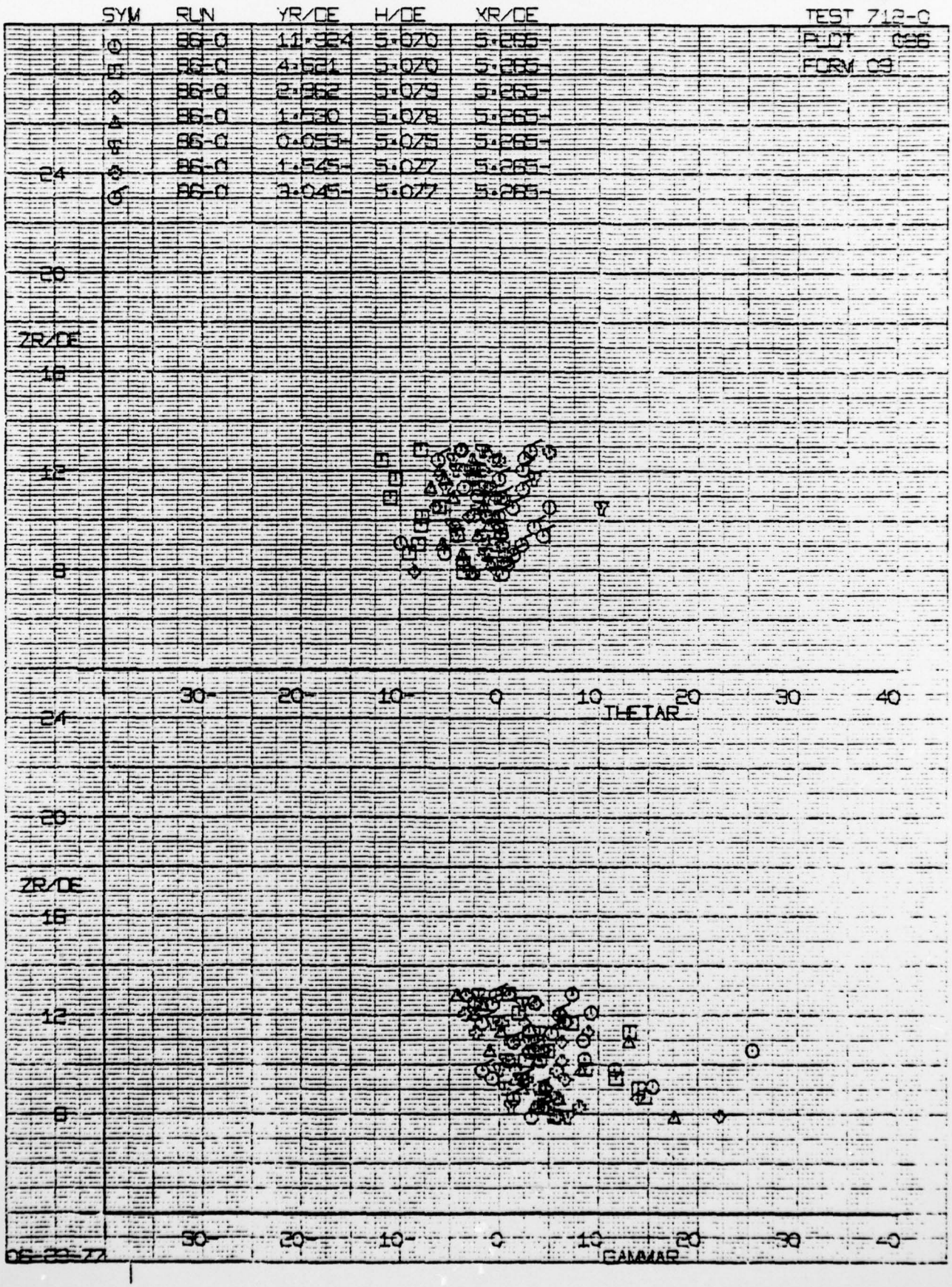
SYM	RUN	YR/DE	H/DE	XR/DE
○	86-0	11.924	5.070	5.265
□	86-0	4.621	5.070	5.265
◇	86-0	2.362	5.079	5.265
△	86-0	1.530	5.078	5.265
▽	86-0	0.053	5.075	5.265
◇	86-0	1.545	5.077	5.265
◁	86-0	3.045	5.077	5.265

TEST 712-C
PLOT 086
FORM 07



05-22-77


SYM RUN YRT/DE H/DE XRT/DE
86-0 11.739 5.070 5.265-
86-0 4.432 5.070 5.265-
86-0 2.773 5.073 5.265-
86-0 1.341 5.078 5.265-
86-0 0.242- 5.075 5.265-
86-0 1.735- 5.077 5.265-
86-0 3.235- 5.077 5.265-
TEST 712-C
PLOT 086
FORM 08
24
20
ZRT/DE
16
12
8
4
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
TTRR
08-29-77


SYM RUN YR/DE H/DE XR/DE
TEST 712-0
PLOT 036
FORM 09
B6-0 11.924 5.070 5.265-
B6-0 4.521 5.070 5.265-
B6-0 2.862 5.079 5.265-
B6-0 1.530 5.078 5.265-
B6-0 0.053- 5.075 5.265-
B6-0 1.545- 5.077 5.265-
B6-0 3.045- 5.077 5.265-
ZR/DE
THETAR
GAMMAR
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